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The Palouse Country--A Marvel of Fertility

By E. A. Bryan, LL.D., President of the State College of Washington



Ten Miles South of Palouse—Every Acre Cultivated

By courtesy of the Chicago, Milwaukee & St. Paul Railway

WERE one to draw a north and south line across the United States through western Nebraska, and another along the crest of the Cascades and Sierra Nevadas, there would be included between these lines one third of the continental area of the nation. Of this entire area, only a small region in the state of Washington, equaling in size the state of Indiana, has sufficient rainfall for the ordinary type of farming without irrigation.

The most famous portion of this region is the "Palouse Country." "Country," because each natural geographic region was so spoken of before the days of political divisions; as, the "Big Bend Country," the "Horse Heaven Country" and the "Walla Walla Country," and "Palouse," from the French word "pelouse," meaning grass land, lawn, down. It is marvelous how the French courier de bois left names over the Far Northwest—namely, Coeur d'Alene, Pend d'Oreille, Nez Perce, etc.

The Palouse Country lies mainly in eastern Washington, south of the city of Spokane, overlapping into "the neck" of Idaho. Its rainfall, which is about twenty-

two to twenty-four inches annually, is accounted for in this way: The high Cascades, their great sentinel peaks clothed in eternal snows, wring out the water of the moisture-laden ocean breezes on their western slopes. In the broad, low valley which lies to the eastward, the moisture capacity of these same southwest winds is increased, and they become dry, hence the arid sage-brush plains and plateaus of the Columbia River. But as the land rises again beyond the Columbia River toward the eastward, the cooling winds again deposit their rich burden on the western slopes of the Rocky-Mountain system, giving rise to a broad belt of farming land where irrigation is not required.

The Palouse is a prairie country, but not level. In fact, there is no level land in sight. One vast, never-ending, billowy sea of wheat fields meets the eye in every direction. There are no rough, jutting points or cliffs, no waste lands. Everything is smooth and rounded off and tillable, though the man from the dead-flat prairies of Dakota or the Mississippi Valley would hardly think so. The superficial

features have been the work of the wind as well as of the water; of the water, for every cove has its drainage outlet, and of the wind, as the smoothly rounded hills with their longer slopes toward the prevailing winds and their short, steep slopes from it plainly show. The great soil deposits are where the snow drifts lie, and were made in the same way. The soil itself shows that it is wind made rather than water made, or at least wind laid rather than water laid, for its particles are very, very fine.

To this fineness of the particles of the soil is due—in part, at least—its wonderful power of retaining moisture, for it is well known and quite apparent on consideration that the moisture capacity of soil, other things being equal, will vary with the smallness of the particles of which it is composed.

The soil of this region is a deep, black soil originating doubtless in the disintegration of volcanic rocks. It is rich in all the elements of plant food and is very enduring. A farmer said to me this summer, "I can demonstrate to you that this land does wear. You see here in this

wheat field is the line of an old roadway. On this side the land has been cultivated eighteen years, on that thirty. You see that this side is better." True, I could see that it was better, but at the thrashing time the poorer side yielded fifty bushels to the acre, and the better side more. Though the surface is so rolling, it does not "wash," doubtless because of the abundance of humus as well as of the distribution of the rainfall. It produces abundant crops. Plants tend to "go to seed," as the great yields of wheat, oats, barley, peas and grain seeds show. Root crops, including potatoes, are very fine.

It holds the world's record in sugar beets for high sugar content and purity. The hardier fruits, particularly apples, grow to perfection.

Thus far the main products have been the cereals, and the marvelous stories of wheat production seem to be borne out by the rapid rise in wealth of great numbers of wheat farmers. The plowing is mostly done with "two bottom" or "three bottom" gang plows drawn by from four to eight horses, and plowing as much as two to three ordinary plows—a saving

Don't Miss the Live Sparks on Pages 10 and 11

in man labor. Harrows of from sixteen to twenty-four feet are drawn by four to six horses abreast. The driver rides a pony behind, thus keeping up out of the dust, and again saving man power. The wide "sixteen-hoe" disk drill is a favorite. The ordinary binder, and the "king" binder pushed in front of the horses and cutting and binding from twelve to fourteen feet wide, are used generally in the higher and moister regions, while the "header" pushed in front of the horses, accompanied by its curious header wagon, high on one side and low on the other, is much used in the drier belt. The "combined harvester," heading, thrashing and sacking all at one time, is coming into use, though it is better adapted to the leveler regions.

Back in Indiana, where the writer was a farmer boy, the good housewife, mayhap assisted by an obliging neighbor, cooked for the thrashers, and visions of the long table on the porch, piled high with plates of crisp fried chicken, golden corn bread, dishes of dripping honey and stacks of "roasting ears" and mashed potatoes, and the inevitable quarter sections of pie to finish off on, are like a sort of harvest heaven.

Here in the famous Palouse it is done better and worse. Better for the farm wife, who is relieved of that great burden and strain; worse for the harvest hand, who eats food not half so good. The device is known as the "cook house." A set of trucks with tongue and doubletrees is the foundation. On this a room, about eight by sixteen, with strong floor and light board or canvas sides and top, is built. In one corner is the cooking stove and cook's table. Along the two sides or down the middle is the table for the "hands." Nothing outside a dining car could be more

weight of a kind that delights the farmer are easily attainable.

The native horse, of Spanish origin, found here as long ago as when Lewis and Clarke made their famous trip to the Pacific, was an animal far larger than the Texas "broncho" and was capable of wonderful endurance under the saddle. His descendant, the "cayuse," maligned and ill used as he is, can be ridden or driven beyond the capacity of the ordinary American horse and possesses qualities born of the soil and climate which we will all praise after he has entirely disappeared from the range. The same soil and climate and feed are developing the "improved" breeds into still better specimens. The production of beef and dairy cattle and dairy products is an important part of the "new agriculture" of the region.

The production of winter apples, insignificant as compared to wheat, nevertheless exceeded five hundred cars in Whitman County the past season. Peas are a splendid crop for soiling or hay or seed. Potatoes are splendid in quality and yield. In a climate milder than southern Indiana or Ohio one would expect Indian corn to flourish. But the summers are so cool that it has not been a popular crop, though yielding abundant ensilage, and when the variety is right, a good yield of husked corn. In fact, the day is at hand when diversified farming will supplant the "extensive" system of industry.

Both clover and alfalfa do well. Cabbages and in fact all kinds of vegetables are of good quality and quantity. Tomatoes do not ripen well. The region is well watered and the water can easily be piped into water troughs or into houses. No other region in the entire West is so unique and so attractive.

Buying an Abandoned Farm

Practical Points for the Would-Be Purchaser

JAMES R. ALCOCK, of Massachusetts, asks about the purchase of cheap farms which may be sold for unpaid taxes, and wants to know where he can learn of such sales. Doubtless there is no way of learning of such sales, but in many of the New England states the secretary of the state board of agriculture has taken pains to learn about these farms and to compile lists for the benefit of would-be purchasers. If the inquirer will write the Hon. J. Lewis Ellsworth, Secretary of the State Board of Agriculture, Boston, Massachusetts, he can learn whether there is such a list now available for that state. Similar information can probably be obtained by addressing the same officer of the other states.

One should not expect too much from such sales. If a farm has been abandoned and allowed to be sold for taxes, there is usually a good reason for it. Much land in New England has been used for farming purposes which never should have been cleared of its forest growth. The returns would be better in a properly managed forest than they can be in farm crops. One should examine such a place very carefully and consider well its disadvantages before tying himself to it. Ten acres of fertile land easily worked and accessible to a good market may yield a much better financial return than two hundred acres of much New England land. One should plan carefully what he wants to do, then consider well whether the particular farm is adapted to that sort

of thing or not. That many of these neglected farms can be brought into profitable condition is beyond question. Professor Sanborn's work in New Hampshire is proof of that, but the expense is heavy, very often more than the cost of land which is already fertile and ready to yield an immediate return.

As I said before, much depends upon what one wants to do with it. Much of that hilly, rocky New England land will yield splendid returns if planted in apple orchards and the orchards handled in a way adapted to the situation. Possibly it may be made to yield good returns as grazing land. But one is accepting a very heavy handicap in attempting to till much of it in the ordinary way. Many of the tracts bought up by parties such as the writer mentions are bought for summer homes, with little thought of obtaining a revenue from them. Wild forest growth or game and fish may be more of an object. The desire to own a home of his own, such as this young man possesses, is a most laudable ambition, and I do not wish to say one word to discourage him in his undertaking. I merely want to caution him against the danger of getting an unsuitable one. There are, in fact, plenty of chances to get good, profitable farms in New England at very reasonable prices. This young man will surely find out if he keeps his eyes open. Many of the farm agencies have long lists of them and may be of great service to one in finding what he wants.

FRED W. CARD.



A Harvest Outfit in Northeastern Washington. Note the Shape of the Header Beds Which Are Driven Alongside the Header. The Grain May Be Stacked or Hauled to the Thrasher. Note the Cook Wagon at the Left of the Picture

compact. It is hauled from place to place to be near the threshing place or the part of the field being harvested, and is thus a great time saver. A roustabout moves the wagon and supplies it with wood and water and stores. Regular cooks, receiving two dollars a day, and sometimes more, do the work.

The shocks of grain are not covered with "hudders," or cap sheaves, as in the East. The thrasher outfits haul the bound grain, feed the hands and deliver the grain in sacks in great piles, which are left standing in the fields until hauled to the warehouse or railway or boat lines. In hauling the grain, "trailers"—that is, additional wagons fastened to the rear—are often used to lessen again the cost of man power. Wheat is delivered in sacks, not in bulk, and in sacks is shipped around the "Horn," for most of the wheat goes to the seaboard and the world market. Oftentimes the warehouses are not able to hold the grain, and then the sacks are piled beside the track on platforms, and covered with boards or canvas until the railways can handle it. Barley and oats are also good crops in the "Palouse Country," but wheat leads the van.

From the opening of the country to the present time the production of cereals has been distinctive, but it must not be thought that it is the only source of revenue for the farmer. I doubt if there is a better country anywhere for the breeding of horses. Hoof and bone and wind and

The Farmer and His Luck

Why the Successful Man To-day is Seldom "Lucky"

IN THE life of a farmer success or failure appears to depend in a measure on external circumstances. If the season is a good one, the farmer flourishes; if bad, he gets behind. An unfortunate fire, disease, noxious weeds, a late or early frost, accidents among his stock, are untoward happenings which apparently are beyond the control of the farmer, and it is natural, therefore, that he should have more faith in his luck than the town man, who knows that as long as he does his work, and there is not an earthquake before pay day, he gets his compensation.

But this belief in luck varies. The successful man, in his own opinion, is seldom lucky; he feels, unless he is an exceptionally modest fellow, that he has won by his pluck and his hard work and his methods. But in the eyes of his neighbor who has failed, the man with an expanding area and a substantial credit account is invariably a pet of fortune. "Brown," this sort of farmer will tell you, "is the luckiest fellow alive. I can't make it out. We came up here together, poor men; and now look at him, and look at me. I've had no luck, everything's

been against me; but Brown—" and so on. Occasionally one does see the farmer who seems to have had abnormally bad luck. He will have been a hard-working, shrewd man, and yet has never managed "to get past it." He will have had more sickness in his house than his neighbor, more trouble with his stock, and he will repeatedly have sold when the markets were against him. But as a rule this lament comes from the man who is the victim of something much less subtle and difficult to analyze than luck. It usually springs from that class of farmer whose place does not suggest prosperity—the cultivated land will be dirty, and hungry for manure or a holiday; scrub and weeds will be in possession of half the grass land; fences will be old and patchy, stock indifferent, and the homestead surroundings poor and neglected. But standing among this mortgaged muddle, the owner will look across at the improved property of his neighbor, and rail about luck.

It is luck, but not as he sees it. His neighbor's luck was that of long ago, in chancing to be born with the characteristics that are essential for good farming. For successful agriculture or stock

raising is not, as so many clever city people would have one think, an occupation so simple that it can be mastered by any one who is willing to bare his arms and get them sunburned. Successful farming requires more initiative and capacity for work than does the average city business. And the lovable sort of settler who likes to lean on a rail and talk out time with the stranger, and who is never worried by the sight of quack grass or thistles, or a reaper and binder wintering in the open, can no more help the fact that he is not a good farmer than he can build an ocean greyhound.

But although the duffer may blame his luck in having been born without that aptitude for the work that is necessary for profitable farming, he is usually wide of the mark when he puts every lift his successful neighbor makes down to the same chance element. It is true that one year's result sometimes affects a man's farming progress for life. He makes a hit or miss in his first season or two, and very often his whole future is influenced. If he scores, while his neighbor fails, he may at once get a lead. But the luck is fairly uniform, and as methods go on advancing, it is a weaker and a weaker factor.

The sensible man works on averages, makes money fast in good seasons, and very often more than holds his own in bad ones.

W. R. GILBERT.

Around the Farm

Items of Interest and Value to the Progressive Farmer

The Great Power of Growing Plants

ALMOST incredible stories are told of the achievements of growing plants, yet it is within the power of any person to experiment for his own satisfaction, and thereby remove any doubts existing in his mind. The United States Department of Agriculture demonstrated by experiments that the force generated during the growth of a healthy pumpkin was sufficient to raise two and one half tons. A practical demonstration of the magnitude of this life force was made at Cinerias, Honduras, where the wall of a church, three feet in thickness, was moved eighteen inches in seventeen years by the growth of a big gum tree.

It is not possible for man to discover all of the hidden forces which produce such power, but we do know that Nature demands the right sort of foods for her growing plants, the most prominent of which are nitrogen, potash and phosphoric acid. Had there been a superabundance of nitrogen in the soil, then the plants above mentioned would have been too soft to have accomplished such results. Had there been too great a supply of the minerals, potash and phosphorus to correspond with the nitrogen, the growth would not have been large enough to have displaced such weights.

In the cases recorded there must have been a large supply of nitrogen to cause such large growth, with a corresponding amount of the minerals, potash and phosphorus, to render the hardness which was required. While we as farmers and growers are not working for such results, we are most certainly working for the best returns from our crops. The haphazard method of farming is a thing of the past, or should be, with all the light which is thrown about us. We can study and apply in the coming months, so let us be at it. The government will supply, free of cost, pamphlets treating the growing of all crops. Look up the fertilizer matter—few of us have a sufficient amount of barn-yard manure, and it is often necessary to use mineral fertilizers with it; in fact, we get our best success when we do. Are we buying the best grade of fertilizers? Are we using enough? Let us figure out just how much available plant food we are putting on our acres; we will then be able to assist our plants in producing wonderful results.

E. A. SEASON.

Would I Give Up the Struggle?

ONE discouraged farmer writes me that he is going to "quit the struggle." He says he has been wrestling with debt for years, and he did hope to get rid of some of it this year by raising a good crop of corn, and here he finds himself beaten at the outset by bad weather. He writes: "What is the use of digging and laboring day after day and year after year just to hand all you make over to somebody else as fast as you make it, and still find the same old debt hanging over you like a cloud? I feel like a bound slave. I am not working for myself, but for somebody else, who lives at his ease on my earnings. I'll shake the mud off my feet and quit the soil. Farming is a life of slavery, the best way you can shape it!"

Probably the best thing you can do is to quit. If you feel that you are a slave to some other man, that he is robbing you of the results of your labor because he loaned you some money when you needed it, I am of the opinion that you had better quit. I'd have somebody tack a card on the front gate with this printed on it: "The man who lived here has gone out of business because he could not make a living. He's a quitter. He tackled a little mortgage and let it down him. He was no farmer, anyway, and the farm is glad he is gone. Somebody with a little grit and skill can make a fortune here."

Evidently this chap is not much good—or at least he feels that way, and nine times in ten that is all that is needed to make him no good. But I would hate to let a little mortgage down me. I'd fight like a Kilkenny cat before I'd give up. More than likely, this man has no heart in his work and does not half try. There is little chance for a man to win out unless he puts his whole mind in the work. There are discouragements in farming, the same as in any other business; but if one stands up manfully to his work, and each day tries to do a little better than ever before, he will surely win out.

It is not the strongest man physically who makes the greatest success in farming. It is the man who plans skilfully, and then carries his plans to a successful

finish. I know a man who has but one hand who is making money from his farm right along. Another I know has but one leg, and he, too, is a successful farmer. Then I know several big, strong men who are just making a bare living from their farms. I know another man who can talk and plan so beautifully, so interestingly, that one can almost imagine he sees a stream of dollars rolling into his pocket, yet he is a perfect fizzle as a farmer. He has no knack of applying his theories practically, and as a consequence he is chronically dead broke.

There never was a time in the history of this country when farming was a better proposition than now. Prices for farm produce are good, and likely to stay good, and the man who cannot throw a mortgage over now is not much of a farmer.

FRED GRUNDY.

Patent Medicines, the Farmer's Curse

THE average farmer of to-day, physically considered, has degenerated. This statement may seem rough at first, but if you will take time to think about it you will agree with me that it is true.

For generations he has been held up, as the model physical man. For generations his life has been held up as the ideal one for health and vigor. The sturdy yeoman was justly considered to be the solid core of the nation. But this was before the days of patent medicines.

Every farmer has an almanac, and the great majority of almanacs advocate some particular "cure all." The calendars, the charts of the stars, the fake horoscopes and the weather predictions are only artifices to obtain entrance for the patent-medicine advertisements into the home.

And the editors, if they can be called editors, of these publications are most wickedly ingenious. They have endless resources for obtaining testimonials, which ring with the marvelous cures of that one particular dope. In most cases these testimonials are purely the fruits of the "editor's" busy brain. They are baits of lies, let down to catch the unwary.

The farmer reading these persuasive falsehoods believes that he has found the very remedy for his peculiar ailment, often imaginary, and at once sends for a trial sample. He is hooked, and unless something intervenes, he will be drawn on and on by the subtle power of the drug, until he is helplessly wrecked, mentally, physically and financially. Patent medicines are worse than whisky, etc., because the victim does not realize what he is taking.

In place of the strong, powerful farmer of a century ago we have men who are bent and stoop shouldered and who are ready prey to any disease which may come along. If it were not for the modern labor-saving machines the average farmer would be totally unfit for his task, and all through the degenerating effect of patent medicines, which were bought to cure, but tend to kill.

He is not greatly to blame. He reads the advertisements not only in almanacs, but in the supposed-to-be-respectable daily papers, etc. He buys, and is ruined.

It is time for us to get together and fight this imposition. If we try, we can conquer this enemy to our profession. Cast aside the yoke of drugs and live once more in the wholesome country.

It is up to us whether we will be led like sheep to the slaughter or whether we will stand like men and fight the horde of "dope" fiends. S. B. HEPBURN.

Manure and Its Relation to Plants

IN ORDER that we may understand more fully what manure is and how it assists in supplying plant food to the growing plant, let us see what plant food consists of and how the soil, water and air make this plant food contained in the manure available for the plant to assimilate.

The food of plants consists first of carbonic acid or carbon combined with oxygen. By this combination carbon is made capable of being taken into the vessels of plants. The framework of all plants, trees and grasses is composed of carbon, and as it decays more slowly than the other component parts of vegetable life, it is left in the process of decay more or less free from the other elements.

The bulk of all the solid excrement that passes through animals consists of carbonaceous matter. Starch, sugar, gum, oils and woody fiber consist largely of carbon. All of the various substances found in the compost heap, whether animal excrement or decayed vegetable matter, as grasses, straw, bean vines, fruits, grains, seeds, etc., all consist largely of carbon, either combined with oxygen or rapidly coming into that condition which will allow them to combine with it.

Most of our natural manures contain substances which are volatile or soluble, and it is plain that these substances should be preserved, so that the soluble portions will not be dissolved and washed away by the action of rains and snow, and that the volatile substances shall not be dissipated by the exposure to the actions of the air and sun as fast as they are evolved. Whether a compost pile, manure heap or manure mixed with other substances, it should be well protected, or else the manure should be hauled and spread direct from the stable, which, in my opinion, is the most practical manner of handling it for the large majority of farmers.

The stable manure, both liquid and solid, should all be saved by the use of tight gutters and the liberal use of absorbents. With this method all of the elements of plant food as fast as they are developed are absorbed by the soil and held in a condition available for the plant to feed upon.

The different effects of different manures is owing to the fact that different soils require different elements of fertility. Carbonaceous manures applied to a soil consisting largely of humus will produce but little effect upon the growing crop outside of being a mechanical means of lightening the soil. Such soils require alkalies or matter containing nitrogen.

On the other hand, sandy soils, which are usually deficient in carbon, are greatly benefited by manures containing a large percentage of carbon. We may prove the correctness of this assertion by noting the results from mixing these two kinds of soil. The peaty soil does not afford the elements needed to give firmness and strength to the culms of grass and grain.

The sandy soil does not afford the carbon that is needed to construct the growing framework. The two soils mixed will furnish the elements needed for both.

Manures containing a large amount of

nitrogen stimulate the plants to a large

and heavy growth of forage.

Those containing phosphorus or phosphate of lime contribute to the fulness and plumpness of the berry or seed.

That which supplies any want of a plant

may be classed as a manure, but an evenly

balanced manure is that which supplies

all of the wants of the various soils, and

which contains carbon, salts with alkaline, earthy and metallic bases, sulphur, iron, acids, gases, manganese and water. To use such a complete manure on some of our soils would be a waste, and in order that we may determine what elements we can most economically use it is necessary that we find out the condition of the soil and what elements are needed for the crops that we are to grow.

Several of the elements in the complete manure are soluble, and others are volatile, so that unless they are needed by the growing crop there will be a large waste from the action of the air and water. This may be prevented to some extent by sowing a catch or cover crop that will take up these elements and hold them until such a time as they are needed, when the catch or cover crop may be plowed under and give itself up to the succeeding crop. W. MILTON KELLY.

For the Discouraged Corn Raiser

SEVERAL letters lie on my desk, and they do not make the pleasantest reading in the world. But I expected them. They come from disheartened farmers, and tell of floods and fields of mud where now should be growing the crop of corn they so much desired to grow this year. The seed is still in the house, and a mouse would mire in the field where the corn crop was to be grown. Gradually the hope of a great crop has faded, until it has become a question of feed for next winter. As one writes: "We hoped to grow a record crop, and all our plans were laid to that end. Now we are hoping for a chance to grow enough feed to carry our stock over next winter. But the hope of even this is petering out."

Let me tell these discouraged fellows that I have seen seasons that were quite as bad as this, and two that were even worse, yet we managed to raise moderate crops. One season we did not get a grain of corn planted until the eighteenth of June, and we grew a little over forty bushels of sound corn to the acre. After the seed was in the ground we kept the cultivators going continuously, finishing the field and beginning again every seventh day. After the plants got a foot high they grew like weeds, and it seemed to me they were tasseling out about the usual time, or very near to it. A neighbor who had higher land got his field planted by the time we began ours, and he raised an average of sixty-six bushels of fine corn to the acre. He also kept his cultivators going until he could no longer pass over the plants, then he ran through once with a narrow-toothed one-horse cultivator. Those who cultivated only twice, as was then customary, raised twenty-five to thirty bushels an acre.

A farmer for whom I worked during one of the worst seasons I ever saw said he never gave up hope of growing a crop of corn until after the first of July. After the tenth of June he always planted what is called "ninety-day corn," a small-eared early variety, and in nineteen years on the same farm he never harvested less than thirty-six bushels of sound corn an acre. He was one of the farmers who believed in constant stirring of the soil to get rapid growth, and his cultivators never rested when the soil could be cultivated. Some farmers contend that late cultivation causes late growth, and the plants are likely to be frosted before the grain matures. The object of constant cultivation is to obtain rapid growth, and all this cultivation must be done before the tassel appears. After the tassel appears it is too late for cultivation to do any good. From the time the plant appears above the ground up to tasseling time is the time to whoop the plant along by any method that will hasten growth, and no corn grower should count the battle lost until a killing frost comes.

It is remarkable how rapidly the corn plant will grow under favorable conditions. I have taken measurements from day to day, when the weather was sultry and the soil was loose and nicely moist, and the growth of corn plants, eighteen inches to three feet in height, was from two to four inches in twenty-four hours. A few plants favorably situated exceeded that rate for two to eight days. To get this rate of growth the soil must be fertile and loose and the weather must be "corn weather," sultry and with little wind. To secure the most rapid growth at the most favorable time the soil must be kept loose. Every crust formed after a shower must be broken up as soon as possible, not deeply, not to exceed three inches.

FRED GRUNDY.



"Combine" Harvester. Heads, Thrashes and Delivers in Sack. This One Cuts Sixteen Feet Wide, Uses Twenty-seven Horses and Five Men, Cutting Twenty-five to Thirty Acres a Day

Review of the Farm Press

Items of Interest from Our Contemporaries

Hogging Off Corn

AS a rule, it is not wise to hog off the corn crop when labor can be employed to gather it into the crib. But Mr. Simison, of this state, relates a bit of his own experience in this matter that should attract attention. He says of his work in this line in 1905:

"During the month of September, 1905, I decided to allow my shoats (one hundred and one in number) to gather their own feed for a time; and having anticipated the same during the early summer, I had sown seven acres of corn (during the last plowing) with Dwarf Essex rape seed, and having an abundance of rain to insure germination and growth, the rape did remarkably well, and when the corn was well enough matured to feed to hogs safely the rape was from ten to twelve inches high and a good, even stand. I began feeding the seven acres of corn by cutting and throwing over the fence to the hogs or shoats on the fifth day of September, and on said date I weighed the one hundred and one head and they averaged 79 pounds each, the lot weighing 7,980 pounds. After cutting and throwing over the fence and gradually increasing the amount fed for about ten days, I turned the shoats into the patch to help themselves. The corn was a splendid crop, probably averaging from eighty-five to ninety bushels an acre. The shoats all did exceedingly well, there not being a sick one during the time they were fed. On the twenty-fourth day of October the corn seemed to be all consumed, and the rape as well. That date being a very rainy day and not suitable for weighing the hogs, I turned them out into their former pastures and fed them husked corn for that day, and the next day being a dry day, I got the hogs up and weighed them. The lot weighed 18,080 pounds, which showed an average gain of one hundred pounds each for fifty days they were thus fed. I sold these hogs a few days later at \$4.85 a hundredweight at home and weighed at home. As feeders or stock hogs these shoats were worth \$5.00 a hundredweight at the beginning of the feeding period given, which would be 7,980 pounds at \$5.00, or \$398.95. They were worth \$4.85 when the feeding period ended, or 18,080 pounds at \$4.85 a hundredweight, amounting to \$876.88. This shows a balance for feed consumed of \$477.93, equal to \$69.56 an acre for the seven acres of corn and rape consumed. Conditions were most favorable for the feeding of the crop in this way, as the weather was dry and there was practically no waste. I took a basket and went over the patch a few days after turning the hogs out, and got less than a bushel of corn from what remained standing."—The Indiana Farmer.

Abolish Box Mangers

THAT box mangers are an abomination is being appreciated by the recent barn builders. Since it is realized that they are not a necessity, but a danger, the best dairy farms are abolishing all racks and raised boxes used as mangers. The objections to having a small feeding compartment boxed closely around the cow's head are three: The box manger cannot be kept clean, and hence is a disease disseminator; it hinders ventilation; and it prevents the cow from feeding in a natural position.

With small corners and tall sides, the box cannot be satisfactorily swept nor cleaned of the odd scraps of feed which collect. This accumulating dirt and dust becomes moldy and rotten, and attracts flies and rats. It is further harmful, in that it becomes gradually eaten by the cow and is harmful to her. The box manger affords a roosting place for chickens, whose droppings become mixed with the cow's feed, with injurious effects. Sweeping or shoveling the waste material from the manger does not thoroughly clean the box, but removes only the very largest pieces of dirt, the small particles and dust remaining being able to do as much harm as the larger ones.

Box Manger Spreads Disease

A very large majority of the cows of the world are afflicted with tuberculosis to a greater or less degree. Practically every cow with tuberculosis is constantly discharging from the mouth and bowels the germs which cause the disease. A cow coughs or breathes the germs into the box manger when it is present. The germs remain alive in the dust and are inhaled by other cows using the same stall, and they in turn become infected, to later act themselves as disease transmitters.

When there is no box manger, the cow coughs the germs upon the floor, but the next cow's head, being so far from the floor, the inhaling of the germs from this position is not liable to occur. Without any doubt, nearly every cow with tuberculosis has gotten the disease by breathing in the germs which some other cow has coughed into a manger. If box mangers were abolished, and manure was removed immediately from the barns, tuberculosis would soon become a rarity.

Feeding and Ventilation

A cow's neck is so formed that eating takes place with the greatest ease when the mouth is lowered to the level of the ground. If a cow eats without straining during swallowing she will eat and digest better, and her health and milk supply will profit accordingly. Therefore, the feed for a cow should be placed at her feet and not a yard or two up in the air. The hay racks placed above the cow's shoulders are entirely wrong.

A cow, to be healthy, requires all the fresh air it is possible to supply. Box mangers, partitions or other boarded barriers act as obstructions to the easy flow of air within the barn, and hence seriously check ventilation.

What Kind to Build

Since it is known that barns should be built without box mangers, the farmer should not neglect to adopt the proper feeding trough by waiting until he builds a new barn. The old partitions and boxes should be removed and new feed troughs and stanchions constructed. The feed trough should be immediately in front of the stanchion and upon a level with the floor. If built of boards, it should be V shape.

A trough built of cement is the ideal. When such material is used, the trough should be concave, without corners. A square trough of boards or cement should not be built; the corners collect dirt, and into them the cow accidentally pushes her food, being unable to lick it from the angles.

The feed trough should be built with a slope, that water may flow its whole length. It should have no partitions nor divisions. Such a trough can be used for watering the cows; the water from a hose being allowed to enter at the upper end, flowing down past each cow, which drinks at will.—Dr. H. B. Wood in The Jersey Bulletin.

Gathering Air Nitrogen

REMARKABLE advance is being made in the gathering of nitrogen direct from the air, without the intervention of nitrogen-gathering bacteria. Several powerful companies in Norway have built immense dams across some of the snow-fed rivers of that country and have developed immense water powers. This power is used for the making of electricity, to be used in the capturing of the nitrogen of the air. The electricity is passed through great metal plates in a furnace, and the current of air that passes through the space between the plates is heated to a very high temperature. It yields up its nitrogen, which is deposited in a form that has to be passed over lime to fix it. The lime over which it is passed absorbs it, and in this form it is sold under the name of lime nitrogen.

This lime nitrogen is used for fertilizer and takes the place of nitrate of soda. The production is now many thousands of tons a year for each of the large factories. So great is the value of this lime nitrogen for agricultural purposes that companies are being formed in many countries to take advantage of the existence of great water power and build factories for the manufacture of this product. The result is sure to be revolutionary. The water power going to waste in all parts of the world is beyond human calculation and the supply of power possible of utilization is without limit.

The whole world is certain to feel the effects of this remarkable development. The agriculture of the Old World will be the first to experience a new stimulation from it, on account of the great needs the European lands have of nitrogen. The first factories constructed have been in Europe, and this will be another reason why the Europeans will be the first to benefit by the new manufacture. The supply of nitrogen in American soil has been greatly depleted in some places, but not to the extent it has been in some of the older countries of the world, in spite of the efforts of the farmers of those countries to conserve the nitrogen.—The Farmers' Review.

Raising Horses on the Farm

THE first thing to decide is what kind of colt a man wishes to raise. For myself, I like two kinds or types of horses on the farm—one of the draft class and one somewhat lighter, say from eleven hundred to twelve hundred pounds. The draft horses should weigh from fourteen hundred to sixteen hundred pounds up, and will do any heavy work that may offer on the farm. Some farmers drive these horses on the road also, but as for me, I prefer the lighter weights for driving, as the draft class are too slow and road work is too hard for them.

No place is better fitted for handling and developing high-class horses than the average farm. Apparently all that is lacking is a love for good horses. In nearly every locality there are found stallions of excellent breeding. What we are most in need of is good selection of mares to begin with in the grading-up process. With our present low class of material it is going to demand the most careful selection in order to make advancement.

My mares weigh between fourteen hundred and sixteen hundred pounds, and are about half Percheron. Some people think that a mare cannot work and raise a good colt. My experience has been that they can if properly handled. As soon as the mare foals I turn her to pasture for the rest of the season, having plenty of other horses to carry on the work. But no farmer need hesitate in breeding because he has no horses to work. I have seen some of the best colts raised from mares that worked every day, with the exception of two or three weeks following foaling.

When the mare is about to foal it can be foretold by the dropping of the belly, sinking of the flanks and enlargement of the udder. Place her in a large stall with good bedding, and if she is in good condition she will need no further assistance. While in foal the mare does not necessarily require food different in quality from that fed at other times, but the quantity should be somewhat larger, all conditions being equal. Those used for breeding purposes only will do well without grain when on nutritious pasture, but if the grass is insufficient some additional feed in shape of grain should be given.

Working mares are more sure of bringing good foals than those idle in pasture and feeding. They should be worked with regularity, the labor never being severe or taxing, nor should the nature of the work ever be such as to make long intervals between feeds. As to the kind of feed for the mare in foal, oats lead, yet shorts and bran may be fed with economy and beneficial results. Mashes can be given occasionally, and where possible carrots and small potatoes may be supplied two or three times a week.

It is important to feed the mare well enough to insure a maximum flow of milk for the foal; yet it is important that the foal be kept growing to his limit by the feeding of some supplementary ration if necessary. The second winter the colt will need about six quarts of oats daily and about one pound of hay for each hundred pounds of the colt's live weight. My colts require nine to ten pounds a day at this age.

At three years colts from ordinary fourteen hundred to sixteen hundred pound mares and a good big horse will usually sell at from two hundred and fifty to three hundred dollars, or even three hundred and fifty dollars. So it can easily be seen that there will be money in colts even if the price of horses goes down.—J. P. Fletcher in The American Cultivator.

Limitations of Soil Analysis

NO CHEMICAL means have yet been discovered that will test soils as a plant does. One difficulty in the way is that different kinds of plants differ greatly in their power to acquire nutrient from a given soil. If by prolonged research a mode of investigation should be devised by means of which quantitative results could be obtained that would be proportional to the yields given by a certain crop under otherwise favorable conditions, the results would not be completely applicable to other crops. This adds greatly to the complexity of the problem.

The nutrient that a plant gets from the soil enters it dissolved in the soil water. It might at first sight seem that simply ascertaining what amounts of the substances in a soil are soluble in water would disclose its crop-sustaining power. This is not the case, however. In the first place, if water be kept in contact with a soil until there is reason to believe

that it is saturated, and it then be removed, a fresh addition of water will dissolve more from the soil, and a third amount will dissolve yet another portion. The soil may be treated indefinitely with these successive portions of water and continue to yield material which goes into solution. In the second place, it seems undeniable that the roots of plants influence the extent to which soil particles in contact with them are dissolved, by means of substances which pass from them to the soil. In this way some crops are enabled to extract more nutrient from a given soil than others can. Again, the presence of decaying organic matter, humus, in the soil, by its production of carbonic acid, increases the solvent power of the soil water, an effect that extends over years of time. For these reasons analysis of a water solution of a soil will not teach us what capacity for nourishing plants the soil possesses.

As plants have some specific solvent effect upon soils, chemists have attempted to find a solvent that will imitate their action. In this they have only partially succeeded. The use of a two-per-cent solution of citric acid suggested by Dyer has in many cases given consistent indications. In others the cultural experience has been at variance with what would be suggested by the analytical results. We have not thus far any solvent that will give results upon all soils that will be consistent with the yield returned by a single kind of crop, much less by all kinds, and it is not to be expected that such a solvent will ever be discovered. The conditions of absorption of plant food by the living cells of the rootlets are different from those presented by an indifferent substance. This is indicated not only by recent observations on osmosis, but more simply by the fact that different kinds of plants growing together in the same solution or soil take up quite different quantities of the nutritive salts. This so-called selective action must determine that each kind of plant is for itself an independent case for investigation in respect to its relations to soil fertility and soil analysis.—J. T. Willard in The Kansas Farmer.

Making Bordeaux Mixture

OUR method of preparing Bordeaux mixture is to keep a barrel of saturated solution of copper sulphate on hand, each gallon of which contains very nearly three pounds of copper sulphate. This is easily prepared by hanging any convenient amount of the copper in a bag near the top of the water. If you try it on a small scale in a glass of water you can see the heavy stream of copper solution falling to the bottom of the glass, and fresh water taking its place, again to fall when it acquires its load of copper. This method of preparing the solution is the only easy and sure method of getting a saturated solution, for as you know if you have tried it, to put the copper sulphate into the bottom of the barrel and attempt to get it into solution by stirring is a very slow and uncertain process, for the saturated solution sinks to the bottom of the vessel.

The lime we prepare by slaking a barrel or more at a time in a tight box with enough water to slake it properly, after which it is leveled off, and kept covered with water, and so remains in good order until used. Before slaking a large quantity, we weigh a certain number of pounds and slake it, and find out about how much bulk it occupies in a slaked condition, and then by using a pail of corresponding size it is very easy to get the proper amount of lime for any desired mixture.

For example, a common formula with us is the 3:3:50, and one of our spray tanks holds one hundred gallons, so all that is needed is to take two gallons of the copper solution, and of the lime, a pail that holds between six and seven pounds of the slaked mass, and we are all ready to mix. To do this easily, we have a high water tank with spouts leading into two smaller tanks, in one of which the copper solution is placed and in the other the lime; then these smaller tanks are filled from the supply tank, and the dilute lime and copper are then drawn off through large faucets, falling together into the spray tank, where they mix easily and perfectly, and the solution is ready for use. If we are using a poison, it is poured into the spray tank while the Bordeaux is running in, and is well mixed, also.

The above process is the result of several years' experiment, and with us is as nearly perfect as we can desire.—H. W. Heaton in the Rural New-Yorker.

Gardening

By T. Greiner

Kerosene Emulsion for Pea Louse

G. E. R., a Connecticut reader, asks for the formula to make kerosene and soap emulsion to use on peas to kill greenfly. In what strength is it to be used? A neighbor gave him some of the emulsion last year, but he used it so strong that it burned up the few peas which the lice did not destroy.

For plant lice we have two reasonably reliable remedies—namely, tobacco and kerosene. If we can get tobacco stems or other refuse cheaply, a good way to fight this plant-louse pest is by means of spraying the affected plants or trees with a strong tea made by boiling or steeping a lot of the tobacco refuse in enough water to cover it, and then dilute this juice with sufficient water to get the color of strong tea.

The formula for emulsifying kerosene given by the Department of Agriculture years ago is yet about as good as any of the many since suggested. Use kerosene, one gallon; common soap (or, better, whale-oil soap), one fourth of a pound; water, one half gallon. Dissolve the soap over a brisk fire in boiling water, and when in solution remove from the fire and add the oil. Churn the mixture for a few minutes by means of a force pump and spray nozzle, or if these are not at hand, beat with a paddle until a cream-like emulsion is obtained. Care must be taken that the oil is thoroughly emulsified. If free oil is present it will rise to the top of the liquid after dilution, and injure the foliage. If well made, the emulsion thickens on cooling into a jelly-like mass, which adheres, without oiliness, to the surface of glass. In making kerosene emulsion, use rain water if possible, or if the well water is hard, add half an ounce of lye or a little baking soda to the water. For plant lice this emulsion may be diluted with twenty or even twenty-five times its own bulk of water, although even a one-to-fifteen dilution would not injure pea or any other foliage.

If our friend's application of kerosene emulsion burned up his pea vines, the probabilities are that the kerosene in it had not been thoroughly emulsified, and the damage was done by the free oil. The application to pea vines may be made with a knapsack sprayer, throwing the spray on the vines with all the force that the pump will give.

I have at times sprayed pea vines with buhach (California insect powder) in water for the pea weevil when many of them could be seen on the vines, and apparently obtained good results therefrom.

Pickling String Beans

Tender string beans make excellent pickles, either for immediate or for winter use. An Alabama lady asks for a recipe.

It is a simple matter. Boil the string beans in salt water until tender; put them in cans, and pour heated vinegar over them. Some people like them sweetened; others want them spiced. Add sugar or spice if you desire. Seal the cans and put on the shelf in the cellar. That is all.

Care of Asparagus Bed

A Vermont lady has a small bed of asparagus, and does not know how to treat it. Should the roots be separated and transplanted?

If the small bed was freshly started from seed, and the plants stand close together in rows, of course they should have been taken up this spring, separated, and planted at proper distances, say two feet apart in the rows, and the rows four feet apart. If it is an old bed that has borne for some time, let it alone. Use the grass and try to keep the ground free from weeds. It will need some fine manure in early fall, and some digging over in spring. That is about all that can be done with it.

Lime-Sulphur for Insects and Plant Diseases

A California reader, referring to some remarks in these columns concerning the lime-sulphur-salt combination as a spray material, says: "If you have no way of boiling the lime and sulphur you will find that the heat developed by the slaking of the lime will dissolve the sulphur; then, by adding the salt, the spray will be all ready." The California State Experiment Station has recently made some

investigations in regard to the efficacy of lime-sulphur as a preventive of plant diseases, and finds it very promising. Salt is now usually left out of this compound.

The Department of Agriculture (Washington, D. C.), in one of its bulletins, recommends making this mixture by something like the following formula: Ten pounds of sulphur, fifteen pounds of good stone lime. Put the lime into a fifty-gallon barrel, and pour two or three gallons of boiling water over it. Then add the sulphur, and as much boiling water as needed to keep the mass boiling, and wet enough so that it can be stirred. Put a gunny sack or other cloth over the top of the barrel, and keep the mass boiling as long as it will, perhaps twenty or thirty minutes. Then fill up the barrel with cold water, and spray the affected plants thoroughly.

This mixture is recommended for various fungous diseases of fruit trees and bush fruits. It is good for the bitter rot of apples, probably for apple scab, and possibly for the fruit rot of cherries, plums, etc. I am trying it for gooseberry mildew, and also for some ailments of cabbages and radishes, etc. It may cure or prevent tomato blight, celery blights and perhaps other diseases of our garden vegetables, and I believe it to be a good thing for greenfly and maggots on cabbages, cauliflower and other similar plants.

The mixture made by self-boiling as

Fruit Growing

By Samuel B. Green

Insects on Pear Trees

R. T. T., Franklinville, New Jersey—In regard to your ten-year-old pear orchard that is beginning to die, I understand that the bark on the affected tree was rough, and when removed, exposed a large number of small insects which you think are lice, and that the tree is also covered with ants. If you would send me at once samples of the infested wood of your pear orchard, I would look them over. I am very sure that you have something on them that is worse than leaf lice. It would also be a good plan for you to send similar samples of these insects to the experiment station at New Brunswick, New Jersey.

Grafting Trees With Their Own Scions

J. C. C., Shelburne, Vermont—It has sometimes been a practise with horticulturists to cut off the top of a seedling tree and graft it with its own wood. This of course does not change the quality of the fruit in any way. The effect, however, is to bring the tree into early bearing, since the grafting process seems to check the growth of the tree by interfering with the sap circulation. In my opinion, just as good results can be accomplished by girdling the tree as by such grafting, and at considerably less expense. In order to do this to advantage, the bark should be cut through with a saw or other imple-

the gardening business is that the tobacco refuse costs so much we cannot afford to use it, and you are fortunate if you can obtain it at a reasonable figure. The best way to apply it is broadcast the same as stable manure and plow into the soil. It readily decays when moistened. If you wish to use it on the lawn, a good plan would be to pile it up in alternate layers with stable manure or leaf mold until decay sets in. A compost heap of this kind should be under cover, so that the soluble fertilizer material shall not be wasted.

Side Grafting and Budding

G. E. H., New York—Side grafting of fruit trees is done even before the bark will slip in the spring. In this case a slanting cut downward is made in the side of the stock, generally to the depth of about one and one half inches. The scion is cut in the ordinary way and is set into this cut. If it is not held firmly in place it is drawn together and held with tying material, after which it is waxed in the usual way. The advantage of this is that it is not necessary to cut away the stock until the scion starts. However, the stock should not be allowed to grow for any considerable time after the scion is started, but should be cut back so as to throw its strength into the scion.

Spring budding may be done in the spring with a dormant bud after the bark slips, and is easily performed.

Best Spray for Plum Trees

Y. G. B., Dayton, Ohio—It would be quite out of the question within the limits of this column to discuss in a satisfactory way the best spray to use on plum trees. In fact, I do not think it desirable to spray plum or any other trees at all unless you are after something definite. I would suggest that you write the experiment station at Wooster, Ohio, and ask them for a bulletin on the subject of spraying, which they will send to you gratis.

Best Yellow Rose

A. B., Brentwood, Arkansas—I do not know what is the best true yellow rose. The most brilliant yellow rose we have in the Northern states is Harrison's Yellow, a June variety that flowers abundantly in its season, but produces no autumn bloom. I do not know of any monthly rose that is a true brilliant yellow. The noisette rose known as Marechal Neil is deep yellow, but I fear would not stand your winters unless given protection.

Leaf Crumpler on Apple

The foliage of the specimen you sent seems to be eaten by the leaf crumpler. The best treatment in the case of apple trees is to spray the foliage with Paris green and water in the proportion of one pound of Paris green to one hundred and twenty-five gallons of water. This mixture, however, is too strong for the foliage of the plum, and liable to injure it, but works satisfactorily in the case of apples.

Injury to Apple Trees

E. R., Harding, Iowa—From your description I should think your apple trees had been injured by blight, which killed back a part of the new growth, and that the trees were now starting on the uninjured fresh growth. This is a very common experience. I think, too, that you should at once remove and burn all the wood that blighted last year, since it is from this wood that the infection spreads to the new growth in the spring.

I am somewhat at a loss to understand the injury to the trunk of the tree as you describe it. I do not think it is caused by any scale or other insect, but if you still think so on further examination, I would like to have you send on a sample showing its general characteristics.

Plum Tree Not Fruiting

S. K. B., Virginia—It would be quite out of the question for me to state definitely the reason why your plum tree does not fruit. The flowers you send on appear to be perfect, but the variety may be self-sterile, which is quite common. In this case the planting of some other variety near it that would flower at the same time would probably overcome the difficulty. If you will let me know the name of the variety, I think I could recommend to you a kind to plant near it that would overcome this weakness.



Harvest Time in a Palouse (Washington) Orchard

here described is said to be harmless to the foliage. I have applied a solution of the ready-made and commercially obtainable lime-sulphur compound in the proportion of one part to fifteen parts of water on cabbages, potatoes, tomatoes, etc., without noticing any perceptible injury to the foliage.

Very likely we can also combine arsenate of lead with this mixture, and protect our potato and similar vines against insects and disease at the same time, and make the effect doubly sure. Altogether it is a promising remedy, but we should use it at first experimentally and very cautiously.

Carrots Hardy

A reader in Stamford, Connecticut, writes that last summer or early fall he sowed some carrot seed, and that the young carrots, then not more than one or two inches in length, withstood the winter in good shape, and have begun to grow splendidly, giving him the promise of very early carrots this spring. He is told, however, that these carrots will not be fit for use, and when they once pass the winter they become wild and poisonous.

This spring I also found some carrots of a sowing made late last summer still in the ground, and now growing quite thrifly. But I do not expect to get carrots from that lot that will be fresh and tender and sweet. There is no danger of any one being poisoned by eating them, but I would prefer to wait a while longer for carrots of this spring's sowing. Carrots after having passed the winter will go to seed. This makes the root tough and woody, and whether poisonous or not, we would not care to eat it.

ment, making the entire circuit of the tree. In the case of large trees I have sometimes taken out a strip one fourth of an inch wide entirely around the tree, doing it in June. This grows over the first season, and its effect is to cause a setting of fruit buds. However, girdling should not be practised except with trees that are very tardy in getting into bearing, as is sometimes the case with certain varieties.

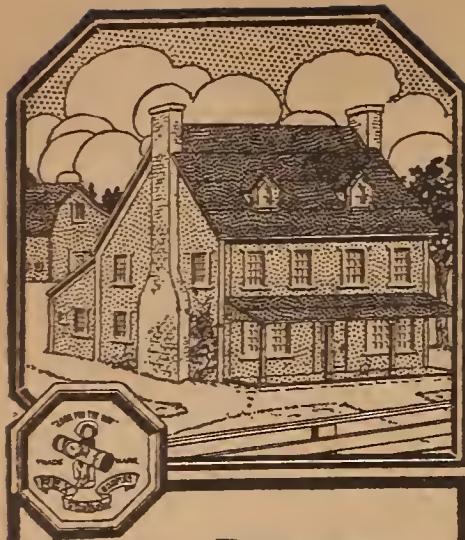
Pear Trees Not Fruiting

Mrs. E. F. H., Athol, Massachusetts—The pear flowers which you sent appear to have perfect stamens and pistils, but this is not all that is necessary in order to have pear trees produce fruit. Frequently pear trees which appear to have perfect flowers are sterile, since they need the pollen from some other variety, in order that their flowers may be fertilized. If there are other varieties of pears within the near vicinity of this tree, say within a block, then I see no reason why it should not produce fruit. There are some varieties of pears that are quite unfruitful under any conditions, and the cause is not known.

Tobacco Stems as a Fertilizer

N. H. C., Eureka, Illinois—Tobacco stems or tobacco stalks are one of the best fertilizers that we have for general gardening. I can remember very well, as a boy in the Connecticut Valley, that we used to use a few pieces of the stalks of tobacco in the hills of our potatoes for a fertilizer. Tobacco stems have long been used by florists to keep off the greenfly and as a fertilizer. They are very rich in nitrogen and potash.

The trouble with most of us who are in



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Poultry Raising

Select One Breed and Stick to It

I HAD nearly a dozen letters from people, chiefly women, who are trying to make something raising poultry or are just starting into the business, and nearly all of them propose to keep two to five varieties.

I can tell them right now that they will fail to make any profit. There is no hen more attractive to the inexperienced than keeping three to eight varieties of poultry and selling breeding stock and eggs for hatching, and no proposition that will wreck one's finances more quickly and completely. I would advise every one who is dreaming about investing any money in such a scheme to keep the money.

Keeping several varieties of fowls is about like trying to engage in several kinds of business at once, and usually ends up the same. One variety of hens is all any one should attempt to breed. If more kinds of poultry are desired add ducks, geese, turkeys or pigeons. As to varieties, my advice is to get one variety and stick to it.

If you are trying to make some money from your poultry, or desire to make some, you cannot do better than to select one of the American breeds. One should not be carried away by the extravagant praises of the remarkable qualities of any new breed or variety. After you get them you will soon find they are no better in any respect than the old varieties.

Every year or two some one bobs up with a new variety of hens, claiming for them all the best points of all other va-

Although there are many rats on his place, my neighbor said there has not been a single one in his poultry house. They try to dig down by the side of the foundation, but when they get to the netting they are unable to go further, and have to give up. GREGOR H. GLITZKE.

Selection of Pullets

IN THE fall of the year the poultryman is confronted with the question of what pullets to keep and what to sell. The success of the business depends on how he answers this question.

In the first place, he should keep only those that are well matured. Small, vigorless pullets are unprofitable and should be put in the fattening pen and prepared for the market. Hardiness is very essential, for if the pullets are not strong they cannot be healthy in winter and will not prove profitable as layers. Then the early hatched pullets are generally the ones to retain, for they will have obtained a better growth, and will therefore be strong and active. The wise poultryman will discard all late-hatched birds and those that have not made a good growth or are constitutionally weak or defective. A deformed pullet will never be valuable, and a weak one is most certain to become infected with some disease.

Pullets with short legs seem to be the better layers. Long legs are the sign of weakness and non-layers. If properly cared for, the well-matured, healthy, vigorous and rightly proportioned pullets will turn out a uniform lot of eggs. They



Feeding the Hens

rieties ever known, with several never before heard of. Many are sold at a high price, but when it comes to the market test they go at the same price as others, while it is a fact that they lay no more eggs per head than the old varieties.

Let people who have an abundance of cash buy and experiment with the new and expensive breeds. With them it is simply a fad, and they want something new or odd. But the person who must make the fowls pay their own way, and a profit, besides, should stick to the breeds that are well known and stand high as market stock.

Not long ago an old farmer who is now off the active list, but still lives on the farm and raises poultry as a diversion, told me that he had visited many of the largest poultry shows in the country just to inspect some of the best birds of the new varieties, and he declared emphatically that he had never seen anything better than the Plymouth Rock and Wyandotte varieties for real business stock. He said, "You can tell all inquirers that these two breeds are still at the top, and there are enough varieties of them to please any sensible person." F. G.

A Rat-Proof Poultry House

A SHORT time ago I helped a neighbor build a rat-proof poultry house which I think was constructed on a good plan.

He dug a ditch to solid ground, as is usually done for the foundation, only this was about eighteen inches wider than was necessary for the foundation. In the bottom of this ditch we laid some small-meshed galvanized poultry netting, and put the foundation on it, but left the netting extend the full eighteen inches all around the outside. Then the ditch was filled with earth and the house built.

will also be good breeders for the next summer's flock. Of course the poultryman must not forget that blood tells in chickens, the same as in human beings, and keep only those with good breeding qualities back of them. W. D. NEALE

What to Do for That Hen

OUR mail carrier must be, I think, quite a hen man. At any rate, when he came this morning he asked me two questions about hens, and told me what he did for one case.

"I wanted to ask you what I could do for a hen that seems to be broken down behind, so that she most drags on the ground. I guess she must have laid too big an egg or something of that kind. Can I do anything but cut her head off?"

Well, now, the best thing I ever knew for such a case was to lay the hen's head carefully across a good hard block, take a nice sharp ax and proceed to decapitate her. Sometimes by putting the hen on short rations, such as green feed, oats and cut clover and bran, you can get her righted up, but it is not once in a hundred times she ever comes out as good as she was before. The trouble is caused by overfeeding, so that hens get too fat.

This case disposed of, the mail carrier said:

"I've got another hen that has an awful sore foot. A great big bunch came right on the bottom of her foot. She acted as though it pained her. Yesterday morning I took an old razor and just opened that bunch."

"Did it run?"

"Run? I should say it did! The matter came out almost in a stream. After I had pressed it all out good, I washed it with peroxide of iron, and this morning she is walking on the foot."

That was pretty well done, only I don't

know so very much about the peroxid of iron. That old hen had what we boys used to call a "stone bruise" on her foot. You see, the man was too good to his hens in one way; he kept them too well. They are big and heavy. In another way, he is not quite so good. He has his roosts too high, so that when the hens jump down on the hard floor it hurts their feet, they being so heavy. First thing you know the foot gets puffed up and feverish. It aches hard, too. You know that, if you remember how it was when you had a stone bruise.

If the man had taken the case in hand before it got all mattered, and washed it with good strong vinegar and touched it with iodine, maybe it would not have gathered and formed pus, especially if he had given her a nice place to live in a few days, say with a good lot of straw to walk around on.

But seeing that he did not just know what to do before the sore gathered up, it was a good thing that he opened the bunch as he did. If he had just washed it out good with warm water, with a few drops of carbolic acid in it, and then bound it up with a rag, I think it would have come out all right.

E. L. VINCENT.

How Much to Feed

THE exact quantity of feed to be given in a daily ration to a pen of laying hens or to a number of stock fowls cannot be stated definitely in a single rule which will apply in every case. The breed of fowls, the time of the year and the condition of the birds are features that must be taken into consideration. A Leghorn will not eat as much as a Cochin, and yet she requires more feed in proportion to her weight than a larger fowl. Hens laying in winter quarters should receive more feed than during the heat of summer. To get overfat hens back into laying condition, place them on a light diet until the surplus flesh is removed. A heavily laying fowl can scarcely be overfed, but, on the other hand, the good feeder will always aim to have the hens eager and anxious for their feed at meal time. Much depends on the judgment of the feeder.

The plan followed with the station flock, in the ration prescribed for laying hens, is given here, not because it will prove the best under all circumstances, but with the hope that it may be of some help to the beginner. One quart of wheat was fed in the morning to each pen of twenty fowls. At noon all the mash was given to them that they would promptly eat up clean. At night one quart of oats and all the corn they would pick from the cob before going to roost formed the evening meal. This was the maximum allowance for each twenty fowls, but the actual amounts fed sometimes varied from these figures.

Some care is required in feeding meat or animal foods. If fowls are given all they will eat of green cut bone, bowel trouble may result. Many poultrymen recommend letting the fowls have free access to dried beef scraps. This has been tried with good success at the station with several laying hens confined during the summer months. The fowls ate considerably more than would have been fed to them in the mash, but no ill effects were observed.—North Dakota Station, Bulletin No. 78.

Notes Picked Up Around the Pen

Be particular about taking out the droppings regularly. Don't forget to spray.

Clean out the nest boxes often. You would not like to have to sit in a nasty chair a good while every day.

Five good hens are worth more than twenty poor ones, and the good hens will not eat any more than the poor ones, either.

We try to get our chicks to market before we are compelled to feed them much mill stuffs. That costs more than the feed which they can pick up about the farm.

When you are selling the roosters, save out some for your own use. I mean one or two for leaders of the flock and a few for dinner now and then when you want a good chicken potpie.

Not half the farmer folk give their hens enough to drink. They suffer a lot for the lack of water. No matter if you give them plenty of sour milk or buttermilk, don't leave out the water. Nothing is so good for them.

Take it one year with another, hens will bring in more clean money, according to the amount of the investment, than the cows will. You don't believe that? That is because you have not kept an account of either the hens or the cows. Be fair about it and test the matter for yourselves.

E. L. VINCENT.

Live Stock and Dairy

Testing Cows

THE dairy cow is the principal source of income upon many farms. And she is becoming more popular, because her earning capacity is better understood. The number of cows kept and the number of pounds of butter produced in any one state often show a large discrepancy. The trouble is that cows which the practical farmer is milking are not paying as they should. This is not entirely the fault of the cow; it is largely the fault of the careless methods that are followed in managing the dairy. Many a farmer writes to us, saying that his herd of ten cows is now producing better returns than a herd of fifteen cows did years ago before he began testing.

Never has this subject of testing been so popular or under discussion so much as to-day. How can each man handle his cows in such a way as to weed out the individuals that are not paying dividends and make up his herd exclusively from profitable animals?

The milk scales and the test are the only solution. When you talk about the Babcock test many practical men have an idea that it is something intricate and scientific which is beyond the reach of any save those who are educated for its use. As a matter of fact, the Babcock tester is one of the simplest machines upon the farm. The whole process centers around the theory of gravitation. Just as the separator takes the rich globules of fat, which are the lighter part of the milk, out of the whole milk, so the Babcock tester separates the oil from the other properties which appear in the milk.

Every one who knows anything about the separator knows that through centrifugal force the lighter part of the milk is drawn to the top of the bowl and the heavier part escapes through an opening at the bottom. The same thing is true with a Babcock tester. The milk is placed in glass bottles, which are merely bulbs with graduated necks. A definite

week. Have a milk sheet in the barn, with a column for each cow. In front of this let the scales be hung, and during the winter months there should be a place for a lantern as well. It is also important that you should have a pencil tied with a string. This seems simple, but just as sure as you leave the pencil on the rack, the first time you want it, it is not there. When securely fastened it is always at hand.

As soon as a cow has been milked, stir her milk as before mentioned, weigh it upon the scales, place the weight upon the record sheet and put your sample into a bottle, which shall bear this cow's name or number. A single preservative tablet, costing a fraction of a cent, will keep the milk sweet for thirty days. At the end of the month test all the cows, taking these composite samples and making a test of each. If you are a little uncertain as to your skill in using the tester, make two runs of each sample and compare the results.

The average tester will hold from four to twelve samples. If you test each cow twice you can easily compute the number of runs that will be necessary. It takes about five minutes to run the machine, and perhaps five or ten minutes for doing the other work necessary.

Thus you see the whole problem, which looks like such a mountain from a distance, is really nothing but a mole hill when you approach it. Moreover, the work is thoroughly interesting, and is valuable in many ways besides the fact that it shows the profitable cows.

Directions for testing the milk are given with each machine, and they are so perfectly simple that any one can follow them readily.

One thing that is worthy of particular mention here is the startling facts that will be disclosed to the man who starts upon this campaign of testing his herd. The cow upon which you have been banking is very apt to be a star boarder. The best-looking one in the herd may be eat-

ing up her rations and the profits of those which stand at her side. The cow you never thought much of is possibly paying you the best money of any in the herd. It is not always the one that gives the largest pailful of milk that brings in the best returns. She may be milking a shorter period and she may be giving a poorer butter-fat content than some not nearly so promising in appearance.

H. E. COLBY.

What is a Good Pasture?

THE principle to be aimed at in a pasture is to cover all its surface with a level and uniform turf of nutritious feeding grasses and clovers which to the pressure of the feet feel firm and dry, and to the eye look uniformly dark green and velvety. The appearance of the pasture should not be disfigured with clumps of coarse, brown herbage erecting themselves here and there in strange contrast to the green stretches around them.

When the live stock are turned into the pasture they should begin to graze at once eagerly and contentedly, without wandering about in search of the more acceptable portions of the herbage. To watch the stock graze and notice the spots that they make for first, and the special herbage that they pick out, has taught many a valuable lesson as how best to treat a permanent pasture. After all is said and done, the live stock of a farm must constitute the ultimate court of appeal when the verdict

of the grazing properties of a pasture has to be given.

In dealing with the permanent grazing lands the object is to secure the gradual extension and strengthening over the whole area of the soil of those growths which have a natural tendency to spread themselves and to form a compact turf of rich-feeding growths. Among the grasses which possess the property of forming thick bottom growth may be mentioned the following: Sheep's fescue, rough and smooth stalked meadow grasses, crested dog's tail and golden oat grass.

It is a matter of great interest to notice how slightly different natural surroundings, such as difference of soil, aspect, position and slight variations in climate, and different methods of manuring and treatment, will act on the same variety of herbage. In one case a strong, stemmy and indigestible hay will be produced, while in another case a compact, leafy yield will result, largely composed of the more nutritious growths.

The chief object, then, in manuring a permanent pasture is so to treat it that while all nourishing plants are encouraged in vigor and quality, they will not be overstimulated, so as to cause them to grow coarser, and therefore of a less digestible and less nourishing nature. For this reason nitrogenous manures should never be applied to permanent pastures.

If an even appearance is to be preserved, it is essential that the animal droppings should be scattered several times in the course of a year. If the droppings are left for any length of time undisturbed, the herbage underneath them will be weakened, and that around their edges will be overstimulated and coarsened, which will eventually lessen the grazing value of the whole pasture.

W. R. GILBERT.

Cross-Breeding Cotswolds

REPLYING to our Missouri reader, H. B. S., regarding the Dorset sheep, I will say that they are one of the oldest and most popular breeds of English sheep, and that they possess many excellent qualities. Their wool is short and of good quality, and they are very hardy, easily handled and possess remarkable fecundity.

I have had Dorset ewes under my care that brought triplets, and one season from eleven Dorset ewes we succeeded in growing three sets of triplets—good, thrifty lambs, not a runt among them. These ewes were imported show stock and winners wherever shown.

The fact that makes this breed of particular value to many sheep growers is that they will couple during May and June and drop their lambs during October and November, in time to be put on the market during the holiday festivities, and hence command the very top prices. They are also used extensively for cross-breeding purposes when it is desired to improve the early breeding qualities of flocks.

Your flock of Cotswolds could be crossed with Southdowns without doing violence to any established rule of breeding. The Southdowns have a remarkable constitution, are exempt from disease, are prolific, easily raised and attain maturity very early. Their flesh is of the finest quality and well proportioned with tender, fat and juicy meat. They are docile and quiet, and are destined to become more and more popular as their good qualities are recognized by sheep men.

When cross breeding is resorted to we must select some breed that has an affinity or harmony of qualities with the one that we are crossing. A cross between the Southdown and Cotswold would likely improve both the wool and carcass in the offspring. The object of such a cross would be distinct and fixed, but if we go to crossing breeds indiscriminately, with no particular object in view except trying to incorporate all the good qualities possessed by the various breeds into one sheep, we will be disappointed. It cannot be done. It is impossible for us to mingle antagonistic qualities in one animal.

If it is desired to improve the Cotswolds for early breeding qualities, the Dorset should produce good results, although I have not had personal experience in crossing these two breeds.

Unless our Missouri reader has some definite object in view, I would advise him to stick close to his Cotswolds, and select rams from the best families of that breed. The Cotswolds are good sheep and will make a man money where some of the cross breeds and other breeds will prove unprofitable. Few men have succeeded in permanently improving their flocks by cross breeding, unless with a definite object in view.

W. MILTON KELLY.

Secretary Coburn of the Kansas State Board of Agriculture states that there are now six thousand more dogs than sheep in that state, and that there seems to be no justifiable reason for keeping so many dogs, since there are not so many sheep left to be killed as there were twenty-five years ago.

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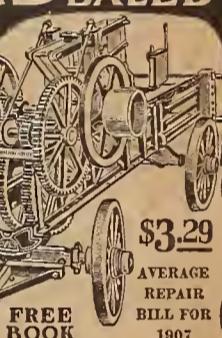
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Live Stock and Dairy

The Flavor of Butter

THE root of this mischief—the root and growth, indeed, of the offending plant—may haply be found in the pasture, and it ought to be an interesting quest for the owners to search for the mischief maker, spud in hand, on eradication bent.

In the event of the quest revealing nothing that is botanically suspicious, one or two simple and practical experiments may be recommended as worth trying with the cream. Assuming that churning is not done oftener than twice a week, or perhaps but once, some of the cream will be getting rather "old" when it is churned. It is always desirable in these cases that the different days' cream should be uniform in age and ripeness when it is put into the churn, or else there is a risk of the cream not yielding up all the butter globules it contains. And in order to secure this uniformity of age and condition it is necessary that some hours before churning time all the cream should be put into one vessel and be well mixed.

The simpler of the two experiments to be recommended is this: When the different creams have been put together, stir in with them a small quantity of powdered saltpeter—say as much as will lie on a ten-cent piece to each gallon of cream—then leave the cream at rest for about three hours. The object is to allow the antiseptic to checkmate the taint of bitterness, which presumably has taken possession of the cream. This it may be expected to accomplish, though at the undesirable cost of prolonging the subsequent operation of churning.

An alternative experiment—now a general and excellent practise in dairy schools and in up-to-date private dairies—is to induce the cream to become perceptibly sour to the taste and smell by developing lactic acid in it, and so accomplish what is technically known as "ripening the cream." This may be done by mixing with the cream beforehand, or even in the churn, a portion of buttermilk—half a pint to each gallon of cream—which has been kept over for the purpose from the previous churning, and has become sufficiently acid by the action of the lactic-ferment bacilli (acidi lactici). This is a practical and successful, though unscientific, way of ripening the cream. It has been employed in some districts here and there for a long time, and employed with marked success in certain cases where the dairies happened to have atmospheres in which the lactic-acid bacillus was predominant. This is all-important for the success of the method.

The Best Way

The scientific method employed in the more advanced butter dairies is to isolate the lactic-acid bacillus from all others, and cultivate—that is to say, multiply—it in gelatin in glass bottles, whose openings are made secure by cotton wool against intrusion by any other kind of bacteria from the surrounding air. The bacillus so treated is known as a "pure culture" of the lactic-acid bacillus, and in this way action is insured in the cream by the one ferment which is necessary to the production of the highest class of butter.

The weak point in the sour-buttermilk method is the impossibility of excluding other kinds of bacteria, which in most dairies the air commonly contains.

The lactic ferment, in point of fact, lies at the root of all successful dairying which is devoted to the production of high-class cheese and butter.

Butter well washed and deprived of all its casein will keep sweet for months if slightly salted and packed firmly in a crock, which should be covered with air-proof paper and tightly tied down. One ounce of salt to four pounds of butter will be found sufficient to preserve well-made butter. There is no need to put salt in the jar, but the vessel should be quite clean, and last of all, be well rinsed out with brine. In default of airtight paper, a layer of salt an inch thick on the butter in the jar will be found a good preservative.

Butter is always improved by the admixture of salt so long as the salting is done in moderation. One ounce of pure dairy salt for eight pounds of butter is very mild salting, but it is better than no salting at all. The salt in a dry form may be added when the butter is being

worked, and at this stage may be evenly incorporated. The more generally practised method is to use a well-prepared brine. For the brining method it is claimed that butter is more evenly salted. The butter while in a granular state is washed clear of its caseous matter by four or five successive additions of water that is cold and clean (no other will do), and when the last has been drawn off through a sieve, the brine is poured into the churn and takes the place of the water. The granular butter floats in the brine and every particle of it appropriates about all it needs of the dissolved salt. The longer it remains in the brine, the more salt it takes up within a limit, and in this way the degree of salting wished for is obtained.

Say what we will on other points, it is highly important to have everything clean—the dairy throughout, the utensils, the water, the air, and though last, not least, the maker—if fine butter is desired.

W. R. GILBERT.

Value of Pastures as Feed

IT is generally conceded that good pastures furnish by far the cheapest feed for growing animals on land not exceeding one hundred dollars an acre in value. The truth of this argument is quite evident when it is considered that the feed as obtained by the animal is in the very best condition. That is, it is succulent, contains all the nutrients in an easily digestible form and is obtained by the animal under very healthful conditions. In addition to this, the cost of harvesting, curing, stacking and feeding is eliminated. On land worth seventy dollars an acre a cow can be pastured for less than five cents a day, while at the present price of grain and hay it costs on the average farm eight to twelve cents a day to feed the same cow in the barn.

Experiments show that as much pork can be made from one acre of good pasture as from one ton of shorts or corn. The cost of these feeds varies from fifteen to twenty dollars a ton. An acre of pasture will save, then, from fifteen to twenty dollars' worth of feed. It is quite evident that in the economical production of animal products good pastures are an important factor.

The reason more and better hog pastures are not used is chiefly due to the fact that hog fences are quite expensive. The advent of the woven-wire fence is overcoming this feature, and now land may be fenced hog tight at an annual cost of from one dollar to two dollars and a half an acre, depending on the size and shape of fields fenced and cost of posts.

A permanent pasture for hogs, though being the cheaper to fence, is not entirely satisfactory for the more desirable crops, as clovers (except white clover) cannot be kept in permanent pastures. The rooting of the hogs greatly reduces the returns and the pasture gets constantly poorer.

Sowing annual crops for pastures, as peas and oats, rape, grain of any kind, or corn, is not wholly a success, owing to the great amount of labor required to plow, prepare and sow such pastures two or more times each year. The most satisfactory pasture for hogs is clover used but one year. The clover seed is sown with the grain crop the year before it is pastured, so there is no cost for plowing or preparing the land. Clover is readily eaten by pigs of all sizes and ages, and the first year it is seeded it gives as much pasture an acre as any crop. The total cost of such pastures is represented by the following items:

Rent of land (\$70.00 land at 5% interest)	\$3.50
Cost of 8 pounds of clover seed at 15 cents	1.20
Cost of fencing	1.80
Total	\$6.50

If this acre of clover pasture is equivalent to one half ton of shorts, it is returning a good profit. Many seasons it will return an equivalent of one ton of shorts, in which case there could be no question as to its value and profitability.

As has been previously stated, permanent pastures for hogs are not as desirable as good clover pastures. In fact, they cannot be compared with them. Clover pastures are not permanent, as

most of the clover is killed out the first winter after it is pastured. Quite often wood lots or other pieces of land that cannot be cultivated are fenced for hogs, and when large enough may make fairly good pastures, though as a rule much smaller returns an acre are obtained than from good rotation pastures. When such pastures are already provided on a farm it is probably not wise to change at once, and in such cases the scheme of rotation as suggested does not apply. On such farms, if it is desirable to hog off corn, which in very many cases it is intensely practical to do, temporary fences may be used to advantage to fence off from any field of corn, whatever amount can be handled in this way.—Minnesota Station, Bulletin No. 104.

Developing a Dairy Cow

THAT is a fine article, "Developing a Good Dairy Cow," in the issue of May 25th. Many dairymen might read it and profit by it. Having been in the business for more than fifty years, I know something about it myself. I always allow my calves to have the top of the milk and one whole teat, calculating that they take one third of the milk. After the cows are milked the calves are fed a quart or more of separated milk while it is warm.

In summer the calves run in a pasture where there is plenty of grass, and at night, after milking, are fed a quart of bran or more each, according to their age. As they grow older they are fed one third wheat bran, one third cotton-seed meal and one third corn meal, as much as they will eat up clean.

I allow nothing to be fed to stock of any description unless it is first class. Inferior food brings on all sorts of diseases, which I avoid. Smutty corn is the cause of blind staggers in horses and mules. Corn fodder that has become mildewed, no matter how it may have dried afterward, not only taints the milk, but injures the cow.

As to the heifers, one year old and over, each has a separate stall, and they are fed, in proportion to their ages, from four to six pounds of nitrogenous food and all the hulls or good hay they will eat.

Of course, they develop, and when the time comes for them to have a calf, which I do not allow until they are three years old, the calf is worth money as soon as it is dropped. I've seen plenty of cows that have had calves before they were twenty months old, but the cows never grow out, and when you breed from those stunted cows, the calf is not worth saving.

I do not allow a whip or a stick to be used on any of my cows. When I want them I call them, and they frequently answer me and come without driving. Be good to everything, especially your dairy cattle. It pays.

Texas.

F. G. SMITH.

Crisp Dairy Notes

It does not pay to feed high-priced feed to poor cows. In fact, it does not pay to feed them at all.

A cow should be valued as a piece of machinery on the farm—not by her cost or her looks, but by what she can do for the owner.

In buying dairy utensils it is a good plan to get those with as few seams as possible. They are much easier to keep clean and sanitary.

Be practical in the dairy; but being practical doesn't mean that you should not be up to date. Being practical in the dairy means making money.

Corn put into the silo will produce more feed to the acre than most anything else for dairy cows, and should be put there by every farmer who keeps cows.

The farmer who allows a milk dealer or anybody else to talk him into giving up his silo is not wise. Stick to the silo and your bank account will be all the better.

Feed cows grain just before milking, and fodder and hay afterward. This will keep down the dust during the milking process and will still keep the cows contented.

Many of the milk cans on the market are like some people. They shine on first sight, but when you begin to become better acquainted with them you begin to find the rusty spots.

Even the hens will return a handsome profit for the skim milk fed to them. Learn to properly appreciate the value of this wonderful by-product of the dairy, then you will be better satisfied with your cows.

R. B. RUSHING.

In the number of hogs, Iowa with 8,413,000 leads all the other states. Illinois is second and Nebraska third.

Live Stock and Dairy

Principles of Farm Practise With Live Stock

THE various breeds of live stock have been developed from local breeds by careful selection of those that showed desirable qualities and using the best of them as foundation stock.

Although pastoral farming is much more ancient than agriculture, it was agriculture that got preference among the first improvers of farming, and reached a high state of efficiency before much was done in the improvement of live stock. Certain advances were made from the unimproved types at an early stage of the history of mankind, particularly with horses; but with this exception, our ancestors seemed to be fairly satisfied with their animals as they found them.

It was only about the middle of the eighteenth century that the systematic improvement of live stock is put to the credit of Robert Bakewell, a Leicester (England) farmer. He took in hand the Leicester sheep, and by a system of his own devising, which he jealously guarded as a profound secret, he worked a wonderful improvement in the forest sheep, and evolved the improved Leicester.

The Bakewell Method

Those who observed his methods noted that he always bred from his own stock, never purchasing any from outside for a period of twenty years. This would imply that he must have bred from animals that were closely related in blood. This practise is generally condemned as certain to make the progeny delicate and predisposed to disease. Bakewell proved that this is not a necessary consequence of close breeding, provided certain precautions are taken. This practise has been followed by other improvers of live stock, and it has been abundantly proved to be the quickest and most certain way of improving, providing care is taken that no animal showing the slightest delicacy is used in the process.

The reason for this is obvious. A certain type is fixed as desirable. An animal conforming to that type is found, and in the early days of improvement no other animal exactly similar may be found. The nearest to it will be the animals that are closely related to the first. Having been derived from the same stock, they will be likely to reproduce the character of that stock, so that their progeny would have a concentration of that character, whereas the progeny of unrelated animals, although of the same class, would represent the diffused characteristics of their several stocks, and would have no more certainty of reproducing the desirable than the undesirable points of their ancestry. It is the concentration of type that gives the marked prepotency.

While Bakewell was improving his sheep he also tried his skill on the improvement of Longhorn cattle, which was the prevailing local breed. These animals had many merits. They grew to a large size, the cows were heavy milkers and gave milk of rich quality. Their great drawback was their slow growth and late maturity.

The Longhorns did not respond to Bakewell's methods so promptly as the sheep, although he did effect some improvement. Early maturity seems to be inconsistent with this breed of cattle, so that it has been surpassed by all the improved breeds. At the present day it is found pure in very few places, and is still losing ground. The Shire horse also came under Bakewell's care and undoubtably owes something to his skill.



The Jersey Cows and Farm Home of A. O. Auten, Illinois

Our breeds of cattle are divided into two distinct types—the beef breeds and the dairy breeds. As a rule, the two types are quite unlike, but in a few instances we find a compromise between the extreme types resulting in an animal good for both beef and dairy.

Cattle of the beef-producing type should practically be the shape of a brick in the body, level on the back, with the underline parallel, back and loin broad, hips broad without being ragged, tail well set on, ribs round, breast broad, brisket prominent without being low in front, neck full at junction with body, gradually tapering toward the head, but still strong behind the ears. The bone should be strong without being coarse, since fine-boned animals are apt to put on too much fat. The limbs should be well fleshed down to knee and hock, the buttocks well developed, and the twist full. The head should be broad between the eyes, the eyes mild and full without being prominent, the skin mellow, with elastic touch, and the hair inclined to be furry rather than silky.

The Dairy Type

The dairy type of cattle shows a wedge-shaped body, very full in the abdominal region and apparently small in the ribs and chest. This small appearance in front is partly due to contrast with the abdomen. Really a good cow for any purpose should have a reasonable capacity of chest, for the efficiency of the lungs and heart is a matter of the first importance.

A good dairy cow should stand lower at the shoulder than at the hips; the hips are broad, the tail set on square, rather longer and thinner than in the beef type. The quarters and limbs are light, carrying little flesh. The back outline of the hind leg is hollow, so that the udder is visible at both sides of the thigh to an observer standing at the side of the cow opposite the hind quarter. The udder should be well developed, placed forward and close up to the body, with all the quarters of equal size. It should be elastic in substance, free from lumps or nodules, not fleshy, and the skin at the back should be reasonably loose. The teats should be of a reasonable size, set equal distances apart. The milk veins under the abdomen should be prominent and irregular in their course. The neck is light throughout, and the head long and apparently narrow between the eyes. This appearance is due to the muzzle of the dairy cow being so much broader than the muzzle in the beef type. The eye is large and mild, giving the impression of quiet intelligence with a certain amount of nervousness, yet without timidity. The skin is not unduly thin, but it has not the mellow touch of the beef type. The hair is silky rather than furry.

Although the dairy cow has none of the blocky appearance of the beef animal, her appearance should indicate good, sound health. A delicate appearance is always suspicious. W. R. GILBERT.

Economical Rations in Beef Production

THE following conclusions have been drawn from experiments carried on by the Nebraska Experiment Station to determine methods by which beef production can be made more profitable.

Prairie hay when fed with corn alone to fattening cattle gives small and unsatisfactory gains and very little or no profit.

Alfalfa hay with corn alone gives large and profitable gains.

The use of well-cured corn stover with

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alfalfa and corn, while it may not produce larger gains, will make the gains less costly because of its low market value, thereby increasing the profits over corn and alfalfa alone.

In feeding only prairie hay as roughness to fattening cattle, much larger and more profitable gains can be made if linseed meal or possibly some other protein concentrate is fed with corn in small quantity rather than feeding corn alone.

The results of two experiments indicate that linseed meal is a little more valuable than cotton-seed meal and much more valuable than wheat bran for supplementing corn when fed with prairie hay or corn stover.

When alfalfa is made at least half of the roughness with prairie hay or corn stover, good gains may be made and at less cost than when no alfalfa is fed, the protein being supplied by the use of linseed meal. In other words, it is possible to grow protein on the farm at a price much below what it will cost on the market in the form of some commercial protein food.

Corn stover cut immediately after the ears ripen and cured in shocks possesses a value fully two thirds as great as prairie hay. The part usually consumed—that is, the leaves and upper portion of stalk—is quite the equal of prairie hay, pound for pound.

The results of a single experiment in which but little more than half a full feed of corn was supplied two lots of fattening steers suggest the possibility of making a larger use of hay in finishing cattle for market than is ordinarily made, and at less cost, especially where hay is relatively low and corn high in price.—Nebraska Station, Bulletin No. 100.

Live Stock Notes

The horse is not yet down and out, with all the autos that are swarming over the country. The farmer who keeps on raising a few good colts—not scrubs—every year will never regret it.

Wean the pigs before they suck the life out of the sow. She cannot be in condition for breeding if she suckles her pigs more than six or eight weeks, and by that time they should have been taught that there are other good things beside mother's milk.

R. B. R.

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Is the Farm Worth Sticking To?

"A CITY hammers and polishes its denizens into a defined model; it worships standardization; but the country encourages differentiation, it loves new types."—DAVID GRAYSON.

What a sermon could be preached from this simple statement!

The United States has suffered for years from what may fairly be called "city mania." From the moment a boy in the district school has shown the promise of abilities a little above those of his fellows his eyes have been turned toward the city as the only goal worthy an ambition. Of course, there have been exceptions, but this has been the main rule. And the movement has not been confined to the "bright boys" of the country, either; the average boys and the dull boys have followed in almost endless procession. They are still following in increasing numbers, but not, I believe, in increasing ratio—for we are upon the fringes of a new epoch in population adjustment which will be known as the "Renaissance of the Soil."

Millions for Agricultural Schools

That such a movement is close at hand is well recognized by those who have their ears close to the ground—ears trained to detect things of just this sort. Only a few days ago I spent several hours with the Assistant Secretary of the Department of Agriculture of the United States government, and while he studiously held himself to the line of official conservatism in his expressions, every fact disclosed by his conversation emphasized the imminence of this condition, of this active and vital movement. For example, there is every reasonable probability that the next United States Congress will appropriate millions of dollars for the establishment, in every state of the Union, of agricultural high schools. As the proposed bill carries at least equal federal benefits to city schools, it is hardly possible that the measure will meet with serious opposition.

There is but one deduction to be made from this fact: governments, and especially democratic governments, do not act in matters involving the expenditure of millions of dollars without the knowledge that there is a definite demand for such action; a situation which presents all the compulsion of an emergency which must be met and provided for and which will be justified by the moral support of the citizens of that government. Unless the officials of the United States government having charge of its agricultural interests recognized that we are close upon this Renaissance of the Soil, would it have secured and expended the vast sums for the training of scientific farmers which have been appropriated by Congress within the last few years? Or would it seek at the hands of the people millions more to be expended in still more advanced and progressive work along the same lines? The movement to the soil is not only imminent, it is actually upon us—and it is a great and happy thing to recognize and welcome it!

A Decision That Must Be Made

The youth of America are confronted with a choice between the country and the city, and it is up to them, as never before, to sit down soberly and "get the lay of the land"—to face the facts and adjust the eye of ambition to the far perspective and see if the light of Destiny has not shifted from the crowded, struggling city back to the land. Admit at the outset of this readjustment of view that some are born to commerce and to the professions which minister to it, and to divert them from this natural destiny would be a sad mistake. Determine if you belong to that contingent which is foreordained, so to speak, to the profession of law, engineering, medicine or literature, or to the business of trading in the strictly commercial sense. If so, go after the thing you are "born to," and go hard. But if, like the majority of men, you are not sure of your "foreordination and election" to any of these callings, but possess good average abilities in several direc-

tions, then it is well to pause at the forks of the road which lead on the one hand to the city and on the other to the country, and ask yourself several searching questions. Let the first one be: What will I get out of it—of the city life or the country life—in the long run? And if you make the comparison a mere matter of figures, you will miss the main thing in the whole matter. Not all the trial balances of life can be struck in figures. In fact, the best and the most substantial ones are incapable of expression by this medium.

Lately a magazine editor said to me, "I have a friend who holds a big position which brings him a salary high up in the thousands; he bought a farm a few years ago, and whenever we meet he wants to talk farm to the exclusion of other topics. He was so enthusiastic the last time we were together that I asked him when he proposed to give up his position and devote himself entirely to farming. His answer was, 'Bless you, man! I couldn't afford to throw up my position! It takes a good share of my surplus earnings to keep that farm going!'

"Then he explained that this did not mean an absolute loss on the operation of the farm, but that he was always putting more into the place than he took out of it. But the change which that farm has made in my friend is remarkable; I believe it has added years to the length of his life, and I know it has paid him rich dividends of happiness of a very tangible and solid sort—the kind that lasts. More than that, it has made him a much broader man; he can now see things from the viewpoint of a producer; his sympathies are no longer those of the conventional city man, but those of a real representative citizen of the country at large. His farm has helped him to think more and to think out of the beaten track. There are to-day thousands of these well-to-do city men who have gone in for 'fancy farming,' who, to use their own expression, are 'working to support farms'—thousands of them where there were only hundreds a few years ago."

"On the other hand, what about the farmer who makes his acres pay him handsomely?" I asked as a feeler of my editor friend.

Money Not the Best Asset

"He has increased in numbers immensely, but his betterment in condition has gone ahead at a still greater ratio," he replied. "There was a time when the farmer who made money skimped his family, worked himself and his family into early wrecks, and got nothing out of life beyond the balance between expense and income. Farmers of this sort are growing scarcer every day, but there are some left, and always will be. Men

of this sort fail utterly to raise the best crops that a farm can produce—namely, wholesome and happy human beings. But there is a big class of farmers, which is growing bigger each day—those who make their farms produce pleasure, contentment and the soldest sort of happiness, and at the same time can show a substantial profit on each year's operations."

This editor saw what thousands of other men are seeing, and what those of us who are near the soil know—that this country is feeling the beginning of a tidal wave running soilward; that there is scarcely another field of effort open to the investment of capital and energy where there is such a chance for good judgment and superior executive ability to make themselves felt in results that pay.

There was a day when the farmer who thought a little ahead of his neighbors was immediately branded in his community as a theorist. It is hardly an exaggeration to say that not so very long ago the farmer who really attempted to depart from traditional rule-of-thumb methods and do a little thinking on his own hook was commonly despised as impractical. This is one reason why the young man who is fairly well educated, up to date and full of ambition is inclined to look upon farming as a narrow, limited and sordid calling in which the ability to do the hardest physical labor from sunrise till after dark, and to scrimp and squeeze, are the main elements. This is very much the way it used to be, but things have changed marvelously in the farming world in the last few years; agricultural science has done things which have compelled the rule-of-thumb farmers to open their eyes and recognize that knowledge of natural principles, of the *why* and *how* of things, brings substantial results; that it gives mastery over conditions instead of merely playing hide and seek with them.

A Man's Size Job

If the young man is looking for a field in which he can make himself "felt," in which there is wide play for all the sound capacities in him, he will look long for an opening which will yield quicker and surer response to all the faculties than modern farming.

Let me cite a case directly in point. Early in life the only son of a Chicago millionaire showed a decided talent for painting. He studied in the European art centers and had the satisfaction of seeing his paintings given places of honor in the great salons of the continent. At length, however, he returned home, and married. His father was the owner of thousands of acres of choicest farm lands in the Middle West. The young man visited these farms and became interested in them. He had imagination enough to see the possibilities of farming conducted to the highest state of practical and profitable development. "Art is all right," he said, "but dealing with the forces of Nature and making them produce for the good of mankind looks attractive to me."

That young man, the son of Samuel W. Allerton, is now one of the biggest farmers in the state of Illinois. His farm is about nine thousand acres in extent and is one of the famous places of the state. He has built a beautiful farmhouse which has all the luxuries of the city, with a thousand delights with which he could not be surrounded in a city. He is proof against any temptation to return to the city—it holds no attractions for him; no attraction, within human reason, could be offered which would induce him to return to the city. He is a power not only in his country, but in the greatest industry of his state; he makes his farms yield him a snug fortune in profits every year, and is steadily developing them into a higher state of productiveness. Progressive farmers from remote parts of his own state, as well as from other states, visit the great farm to study his methods. His work is making all who come in contact with it realize that there is such a thing as big farming; that here is a career giving full scope to the ablest energies of the ablest men; that to be this kind of a farmer is to play a thinking part.

To Our Readers

We have been fortunate enough to secure for the members of the FARM AND FIRESIDE family the talent of Mr. Alfred Henry Lewis, than whom no living man is better able to talk of affairs political. Beyond any other man that writes, he has the faculty of seeing clear through the deeds and ways of men into the fundamental motives of life. His long and varied experience as a newspaper correspondent added much to his equipment, but he had, to start with, a most unusual gift of observation. His province is the *inside* of events, the real strings that are pulled and the hands that pull them; and in knowledge of such matters we believe he has no equal. About things political he has a kind of sixth sense—an intuition about the logical outcome of a given situation and the means by which it will be brought to a finish. Better still, he knows how to make his information and his intuitions as clear to a reader as they are to himself. His writings are like a searchlight on any man or matter they touch. Mr. Lewis has lived in close personal contact with all the biggest political events of modern times and knows intimately the men who have molded these events. You will find his introductory talk on page 11 opposite of this issue.

Politics

By Alfred Henry Lewis

THE editor of FARM AND FIRESIDE has asked me to write a series on politics. I am more willing, since, aside from such labor being in the plain line of my trade, where should one find a better audience than the readers of this old established paper? The best promise I can make you at this pinch is that what articles are to follow shall in no wise resemble this. Just now I am obliged to proceed somewhat in the fog. At the threshold of everything of ticket kind, practically speaking and in a campaign sense we have entered upon nothing. As I write this, some of the nominalists are still carefully walking the fence. Later, by a handful of weeks, all the cats will have hopped; there will then be candidates to consider, party differences, not to say prospects, to discuss.

* * *

Pending that definite moment, I may not perhaps more worthily employ my space than in efforts to promote our own mutual acquaintance. Let me say a personal word or two about myself; not so much to invite confidence as proffer warning.

In getting these articles together, I shall write freely what I think and why I think it. I shall give you the truth as I find it and see it, touching both measures and men.

These latter cannot with justice complain. They will be public men—watchmen on the walls of government, or eager to become so. Such are to be canvassed or criticized, discussed or dealt with, by the public that pays them and over whose interests they are supposed to stand guard, in what manner and at what length the public deems fit. It is not theirs to find fault, or seek to limit the public in that franchise of free speech.

Folk who do not care to be thus handled should remain in private life. They are not to ask the public for its White House or some other office, and then start indignantly at the sight of balances, protesting against being weighed. Mr. Roosevelt in his private station belongs primarily to himself, incidentally to mankind. Mr. Roosevelt in the White House is quite another affair. As President he belongs primarily to the public—to you and me and every soul between the oceans. He is his own man merely per incident. In that high rôle of President, either for approval or for criticism, the least among us may tell his mind about him. As President Mr. Roosevelt is not his own man, but ours; and so we may speak of him. Also, what is true of a President is true of every public man jack of them all.

* * *

Let me go back to myself—not at all, be it known, in any spirit of self-praise. I shall, as I have stated, do my writing with the bridle off. And yet I am ready to bind myself in divers things. As practised and taught by the parties, politics comes to be no more than just the art of arousing the ignorance of mankind. In this ignorant particular I shall not follow the parties. I shall write not so much to make folk agree with me as think for themselves.

Personally, I belong to those—a huge army they are—who neither hold nor desire to hold office. I have no genius for office. I would sooner hold a horse. Or a baby. There isn't a public dollar upon which I've fixed the eye of hope. Thus I may describe myself as one who has no ax to grind. Also, I say these things to the end that, in considering what flows from my pen, you may be helped by the knowledge of a source.

* * *

Let me both profess and confess. In politics, so far as parties go, I should have trouble in placing myself. In 1892 I was as good a Democrat as one could be, for tariff reasons, whose father had been an original abolitionist and voted, when time was, for John C. Fremont and James G. Birney. I cast a ballot for Mr. Cleveland; and ceased, by the way, to boast of it within the year following his inauguration. Still, I went calling myself a Democrat, feeling the need of being something.

This dubious condition lasted until 1904, when the Sheehans and the Ryans, the Belmonts and the O'Briens, stepped forward as specimen Democrats and took charge of party destinies in behalf of Mr. Parker. At the spectacle of Mr. Ryan and Mr. Belmont posing as representatives of the Democratic party, my own politics began to back for a corner and pull a gun. If these gentry were Democrats, I was something else. And so I became a Roosevelt man, and have remained one ever since.

Acid, not alkali, active, not passive, Mr. Roosevelt makes unhesitating war upon those who are at loggerheads with public weal. I have known three presidents other than Mr. Roosevelt. Not one of the trio wielded his office; his office wielded him. One and all they were as helpless as three ships ashore, three flies in amber. The White House is a heavy load. In my time at least—and I've lived neighbor to four of them—Mr. Roosevelt has been the only President of original strength enough to move it.

As I write, I am free to say that I don't know what I shall do with my this fall's vote. By the time this is read the Republicans will have declared themselves, with the Democrats on the brink of being heard. Just now, however, the tickets of both parties sit kicking their heels in the antechambers of time. Wherefore, as I look forward up the aisles of the probable and possible, so far as I myself am involved—and I think the same's the case with thousands among the voters of the land—everything goes swinging on the hinge of a mighty IF.

Mr. Lewis is abundantly able to stand on his own feet. We are stamping neither our indorsement nor our disapproval on his political opinions and beliefs. It is for you to agree or disagree with these opinions as you see fit.

If you have anything to say in answer to any one of them, write to him, in our care, confining your reply to two hundred words. We shall hope from time to time to publish some of these replies.—THE EDITOR.

Holding, as I do, that every man should do his own thinking, and when he's got it thought, should say it—or write it—and guiding myself always by that rule, I am no less compelled to tell you that I know of no one who for the fifteen years last past has been more often in error than myself. This offers no reason for not listening to me, although it may for not regarding what I say. I have found it worth while to listen to everybody. Indeed, I've learned more from folk whom the world styled ignorant than I have from your professed and professional Solomons.

It is for the good of every one to come into mental collision with his fellows. A man is so much like a match that he can't burn by his own merits. He must scratch himself mentally against somebody else. Then he blazes directly. And that is the position I reserve for myself. I shall hope to become that sandpaper which is to ignite you politically; after which you will burn in what manner you please.

For myself, I am no proper light to guide the political feet of any one. I am too much inclined to the positive; too much the partizan in the way of friendship. This latter in particular. If I like a man, I am no one to see flaws in him. If I don't like him, it is only after supreme effort that I can discern in him any virtue, and then never very much. Wherefore, for these purblind reasons of prejudice, were I to offer myself as a captain of political thought, it would be but a most scandalous instance of the blind seeking to lead.

Not that I shall give up the practise of coming to my own conclusions and picking my own paths. Also I advise you who read to do the same. I am afraid only of him whose wits have been halter broken. I want nothing to do with the man whose intelligence shows the marks of the saddle. Besides, the world requires a strong per cent of wrong thinking and wrong going to keep it in balance. Were we all to be right, and so go the same way, we'd tip the boat over.

In my own political comings in and goings out, I try first, last and all the time to be an American. Born in the Buckeye Western Reserve, I remember only that I belong to the whole country. Judge Jones of Asheville told me how he wrote a letter to Mr. Roosevelt long ago, thanking him for a tribute paid the Confederate soldiers in a Decoration Day speech.

"As a Southern man," wrote Judge Jones, "let me express my gratitude."

Mr. Roosevelt replied, setting forth his gratification at receiving such a letter, but wound up by saying, "As for myself, however, I'm not a Southern man, nor a Northern man, nor an Eastern man, nor a Western man; I'm a United States man."

As describing my own position, I indorse the Roosevelt utterance; and I do so not because it's Roosevelt, but because it's right.

Having fixed myself firmly as an American, I begin by forgetting such commodities of politics as the Republican party and the Democrat party. Not but what I favor the existence of the parties. Given my own way, I would ever have two parties. Having two parties, I'd watch them and distrust them and never take my eyes off them.

"Men," said Machiavelli, "are born evil and become good only upon compulsion."

Acting on this phrase hint of the Florentine, it might be safe to say that political parties are born good, but become corrupt unless opposed and watched. By the light, then, of the latter wisdom, let us favor the existence of both the Republican and Democrat parties. The public needs one to mount guard over and restrain the other. The interests of the country are best served by two parties, so evenly matched that the question of which shall come uppermost can only be answered by counting the ballots. Keep a party camped next door to defeat, and you keep it on its good behavior.

* * *

It is easy to believe that the above will not dovetail with the tastes of all who read it. There live folk who boast themselves for a republicanism that has never seen an interruption. There live folk who exalt their democracy as having flowed for forty years without a ripple. With these it is the coat, and not the man inside the coat, the mask, and not the face behind the mask, the badge, and not the beating heart beneath the badge, that stands important. It is a feather in the cap of such a man that what he was he is, and what he is he will be. Like the occasional toad, he sits embedded in his original sandstone; nothing short of revolution would serve to blast him into political daylight or bring him to the surface of his times.

Politics, stagnate and without a current, is as disastrous for a region as for an individual. That, for example, which most obstructs a solid South is its solidity. The Republican party never considers the South, because it cannot win the South. The Democrat party never considers the South, because it cannot lose the South. Some slight uncertainty might work the South a benefit. The South holds itself ignored for being Southern. That is error. It is ignored for being solid. New England suffers in the same way for reasons similar. And this is by the Law of the Distribution

of Things. In politics, as in business, no one buys his own, but sells it. And so, if you would be listened to and not ignored, fed and not starved, enriched and not stripped, become uncertain. Cease to think that progress consists in standing still, or your politics better for being petrified.

* * *

Were I business manager of the country at this crisis I would issue a bulletin to the voters giving the following advice, which they, of course, would embrace or reject, according to their cautious fancy.

In the coming campaign, don't look at the platform, look at the *Man*. In politics the *Man* is the only issue worth your time and pains. There's nothing in a platform, nothing in a party name. Experience long years ago declared against the cant of "Measures not Men," and the fool assumption that it is the harness, and not the horse, which hauls the load along.

How often must we be reminded that in 1892 we elected a President on a tariff issue, who called an extra session on finance; that in 1896 we elected a President on a finance issue, who called an extra session on tariff? So much for platform; so much for issues; so much for the overshadowing importance of the *Man*.

Stick to the *Man*. Look him over with care. There be men whom power spoils, and who cannot be great without being dangerous. Ask yourself if either party's candidate be one of these.

Likewise, the query of a general fitness might best be met by a survey of the gentlemen—by a review of their public records, and of the company they have kept. The last is decisively worth while; for it offers the best method of applying the acid to a man, with a purpose of declaring what of gold and what of dross he carries in his composition. "We love him for the enemies he has made!" By the same token, a man is sometimes to be distrusted for his friends.

* * *

As you go picking your political way, don't permit yourself to be bullied or bamboozled by the roarings or the whinings of Money. Money is always a coward, and commonly a fool. Its attitude is that of the threatening, bullying, bragging terrorist, who will either rule or ruin. It works by inspiring fear, and in its fear conjuring resorts to every quack device. It will gnash its jaws, lash its tail, spout fire and smoke in the face of a quailing race.

And yet, all that tail lashing and jaw gnashing and fire spouting are a sham. Money, for all its apparent ferocities, is no more perilous to folk who face it than is the fire-spouting, tail-lashing, jaw-gnashing, papier-mâché dragon of grand opera. Attack it, and what follows? A couple of ruffe stage hands crawl abjectly from its papier-mâché stomach—the complete yet harmless reason of that jaw gnashing, fire spouting, tail lashing from which a timid world shrunk back. That dragon, so fearful of aspect, has ribs of lath and skin of pasteboard, and if you but belabor it long enough, and hard enough, forth from its tawdry belly will crawl the "financiers" who have been "working" the monster.

* * *

As you go ransacking about in politics you will find a citizen whose commonest traits are a manner of spurious importance, a mien of bogus gravity. This fellow infallibly lives in the city. His marks are a white shirt and a trick of leaving town for the summer. His conceited life is spent upon a pedestal. When he talks—which is most of the time—he is heedful to talk to you, not with you. He never goes to war, and has a deal to say concerning the horrors of war. He never speaks of the horrors of peace, of those kennels styled tenement houses, where children, four and six and eight and ten in a room, swelter in summer, freeze in winter, starve always. He lives by interests, and dividends, and profits on money loaned or invested, and would sooner see the Stars and Stripes the dish-clout of the world than have those profits threatened. It is he who coins the word "Jingo" and talks of the "Safe and Sane."

There is yet another who lives by stock rapine, and whose hunting grounds are Wall Street and the Stock Exchange. It is such as he who are the weasels to suck the yolks of other people's honest opportunities. Also, they, like that other, are prone to shout "Jingo!" and raise the cry of "Safe and Sane!"

It is wisdom to observe these folk and settle the color of their feather. It is they who decry a navy, as likely to tease one into foreign trouble, and thereby arrange a "fall in stocks." They are strenuous to increase the army, to the end that it beat out labor strikes as Kansas farmers beat out prairie fires.

By talking with these narrowists you will learn that to be—in their eyes—wholly "Safe and Sane" one must be timid, slow, dull, dumb, deaf, blind and weak, and hold firmly by the tenet that peace with dishonor is preferable to war however honorable.

Their doctrine won't work. If everybody in every age had been "Safe and Sane" there would have been no Columbus discovering America, no Declaration of Independence, no Bunker Hill, no Sermon on the Mount. Likewise, the long roster of jingoes includes Grant, Lincoln, Jackson, Monroe, Jefferson, Washington, Adams, Franklin, Hancock, Patrick Henry and Paul Jones. The nation's history, when the "Jingoes" are eliminated, and all save the "Safe and Sane" suppressed, dwindles to a merest roll of money lenders, of the tribe that were lashed from the temple when time was.

These same gentry are just now going to and fro in the world, and walking up and down in it, crying, "Let us alone!" In that connection consider the chapter in St. Mark where it is written: "And there was in their synagogue a man with an unclean spirit, and he cried out, saying, 'Let us alone!' One safe way to invest your ballot is to discover how these people are going to vote, and vote the other way.

* * *

Every candidate can be classified as Whig or Tory. How shall we know them? Your natural Tory is one whose vast concern is reserved for property. Spill down a million in gold before him, and it will put him in a trance. He believes in the sacredness of the Thing. Your native Whig—a better man—is one whose first and warmest thought runs in favor of living, dying flesh and blood. He believes not in the Thing, but in the Man. If your utter Tory were afloat with a cargo half bullion, half babies, and the ship sprung a leak, he would throw the babies overboard and save the bullion. If an utter Whig were at sea with the same cargo, he would under similar sinking circumstances jettison the bullion and save the babies.

In picking your candidate, look for the Whig.

* * *

What are those attributes in the make-up of a public officer, which for the best safety of the public should shine out above the rest? They are courage, intelligence, honesty.

Consider in particular that question of

honesty. There are several fashions of honesty. One honesty is militant, and wears a sword. It is headstrong, impetuous, bridleless, restless, aggressive; it has a temper and will not be withstood. You cannot bribe, you cannot bully, you cannot cajole it.

As against him who has this honesty, another may be also honest. But in the latter gentleman's more cautious case, his integrities are under control.

Vote for the headlong man of honesty, rather than for him whose honesty will stand without hitching. The latter kind of honesty is not likely to interpose between tax eaters and their prey, or beat off what wolves would maraud the public flocks and herds.

* * *

Folk delight in phrases, and fall in love with a mouth-filling term. You may hear them, for example, talk of the "Judicial Temperament," and of the men who possess it.

"Judicial Temperament"—if the words mean anything—stands for the abstractive, the thoughtful, the passively philosophical. Eminently, the phrase does not describe him who is instant, pushing, alert, decisive, and accomplishes things in downright saber-slashing fashion. The "judicial temperament"—a highly respectable term, that—thinks things, but never does things. He of "judicial temperament" would not in the face of Europe cut a Panama Canal. It calls for folks who are not "judicial," but "executive," to cut canals.

In vote casting stick to the "executive" in temperament rather than the "judicial."

True, the executive kind of man scares Wall Street and whitens the cheek of stock gambling. None the less, they secure safety for the individual, respect for public right. Men fall into two classes—the hunter and the trapper. One sets snares, and succeeds by indirection; the other goes straight to his purpose, his game, and looks by strength and direct hunter skill to pull it down. The hunter, the executive man, by the very vigor, not to say the violence, of his methods, proves alarming to certain souls. There is a black-flag predatory wealth that bears the same relation to public interests which hen hawks do to poultry interests. This buccaneering money complains of those who have too little of the "judicial," too much of the hunter temperament. Which is, I think, a reason why you and I should cling fast to those who are "executive."

* * *

See to it that your candidate surpasses all others in the size of his hat and the size of his heart. Avoid him who is only nominated because predatory, black-flag Money believes him "safe and sane." Turn away from timid ones, gifted of an intensity of prudence that thinks only and always of self. Also, from those who exceed in a machine loyalty and a profitable deference to the Boss. Look for an American man, not for a party man. Look for him who will serve the people. Set the heel of your ballot on the serpent head of him whose single thought would be the dingy interests of what sordid, hungry coterie had placed the wand of office in his hand.

In nominating Mr. Taft the Repubicans but obeyed the word of Mr. Roosevelt. On *an* argument that prefe principals to agents a majority of the party would sooner have had Mr. Roosevelt himself. Also the latter is an accurate description of many Democrats. myself am of that number, feeling sa with the known than with the unknown. It is, however, Mr. Taft; and a world, waiting to dispose of its ball will now turn to Denver, and the Democrats before making up its mind.

The situation so far offers one important word of encouragement. Mr. Taft is without doubt or chance of challenge an honest man. If elected, he will do his best to give mankind a right administration of its White House. Should he fail, it will be by errors of the head, not of the heart.

There should be wide and full occasions between now and the ballot in November for discussing Mr. Taft. Such discussion, however, to have best advantage, must be deferred until the opposition has marched its candidate upon the field. Meanwhile we are free to congratulate ourselves upon a Taftian honesty. That much—and it is a deal—is at least secure.

To be sure, it is not all. Honesty is much, but not enough. Mere honesty would no more make a perfect President than it would make a perfect sailor. In this business of President picking, the hunt of inquiry should not halt at honesty. Being President is so much like swapping horses that simple honesty cannot be regarded as a complete equipment.

The Triumph of the Home Maker

By Pearle White McCowan

THE little woman in a blue-print dress who closed the door and watched with admiring eyes until the well-dressed woman with a suit case had turned the corner, and passed out of sight, had ambition written large upon her face.

She had just been offered a "state agency" as an acknowledgment from the firm of the excellent work she had done during spare hours introducing a certain new brand of breakfast food in her home town.

Her work would be to travel from town to town appointing and equipping agents, who in their turn would distribute samples and extol the merits of the wonderful new food.

She would receive a salary which was, to say the least, alluring, and they did need money so. A large doctor bill and other expenses had depleted their small savings and so eaten into their credit that it would take months to set them on their feet again.

And that third payment on their home, small though it was, would be utterly impossible—unless— The selection and purchase of that home had been the beginning of the fulfilment of one of their dearest dreams. She couldn't bear to let it go back. This offer looked like a godsend.

Of course, there was a chance of her failure to do the work as required, but she came of a line of successful traveling salesmen, and doubt of her abilities was not a part of her make-up. Her father was the best salesman Johnson's ever had, while the most shining example of the abilities of the feminine portion of the family was her Cousin Stella, who for four years had been making a success as "general agent" for a book firm.

She could talk, there was no doubt of that, and she smiled whimsically as she thought of some of the good-natured sallies of her friends about her undisputed abilities in that line. She did not anticipate any difficulty with her husband over the proposed change. Until now she had always been able to bring him around to her point of view, and had little doubt of her ability to do so in this case.

But the children—it wasn't so easy to dispose of them. She tried to believe that common sense told her they would be just as well cared for by Aunt Chloe. She had always wished she were able to hire Aunt Chloe outright, instead of one or two days a week, and this would make it not only possible, but a necessity. Then she would make it a point to come home once in two weeks anyhow.

The children, three of them, the youngest a curly haired boy of seven, came noisily in from school. Preparations for their simple tea were soon under way, and

through it all the mother worked in a fever of subdued excitement.

"I'll not tell the children until I've talked it over with John," was her inward comment.

A little later the front door was thrown quickly open, and John's hearty voice rang out, "Come here, Jennie, and see what a surprise I've brought you."

In another moment she was giving a much-surprised but very joyous welcome to her Cousin Stella.

"Why, dear, it's eight years since I've seen you, and I've never seen this little boy."

Excited comments and reminiscences raced from tongue to tongue for the next half hour.

At the table John asked about her husband, to learn, with surprise, that for two years he had been in the West. "Looking for a place to locate? Still doing mason work, I suppose? 'Fraid you couldn't hire me to stay away from home for two years at a stretch. Tom was always such a home fellow, too."

Thus Jennie's well-meaning but none too tactful husband talked and questioned about his friend, and Jennie noticed that Stella seemed to evade most of his inquiries, while a queer hurt look crept into her eyes, and she often turned the subject to her success in business.

"Just think, I cleared five hundred dollars above expenses last year! Wasn't that pretty good, John?" and Jennie's ambitions, which in the excitement had suffered temporary forgetfulness, began to soar again.

She would wait and enlist Cousin Stella on her side, then together they would besiege John. Somehow, now that he was here, she began to be a little fearful of his opposition. She remembered certain uncomplimentary remarks about women who left their homes to go out and earn money when it was not necessary. Most of them applied to this particular cousin. At all events, it would be well to talk it over first with her. But during the evening no opportunity offered. John stuck closer than a brother.

But when Stella pleaded fatigue, and Jennie went to show her to her room, she lingered for a little confidential chat.

"Oh, yes, and Fred's picture; you said you had it with you. He must be a big boy now. He was quite a baby when I saw him, and such a dear little fellow."

Stella drew forth a picture of a handsome, black-eyed boy, from whose eyes shone an almost insolent self-will, and handed it without comment to her cousin, who, when she returned it after a somewhat ambiguous compliment as to his looks, was surprised to see her cousin's eyes filled with tears.

A softly sympathetic hand placed upon Stella's shoulder brought forth sobs that shook her frame and seemed to rend her very soul. When the tempest of her grief had subsided a little she told her story.

"I have never told any one before," she said. "I have been proud, and would not own to hurts. I claimed even to mother that things were all right. But oh, Jennie, in the two years that Tom has been West I have heard from him only once, and that was a curt, business-like little note. He never wanted me to canvass, and although after the first few months he did not openly object, I knew he disapproved. One day I went home and found that for two weeks he had been lying idle. There was no work, he said, and I, who had earned twenty-five dollars that week, flaunted it in his face, and told him if I was him I would go West or some place where there was work, then.

"The next day he went. Postals and gifts to Fred have come at intervals, usually with different postmarks. Reports of him have come at various times, and I—oh, Jennie, I couldn't help it—I have always lied out of it, and pretended I knew, or that Tom was rather a poor correspondent and hadn't let me know yet about his change of address, but I'd probably hear in a few days. I've been nearly caught several times, but I just couldn't own up. I've thought all along that he'd come home, but lately I've given that up. And oh," with a great heart-breaking sob, "that is not all. They tell me he is drinking."

For a while she sobbed in silence, and Jennie could only smooth her hair and cry in sympathy.

Finally she ventured, "But you still have Fred. What a comfort he must be." This brought another outburst.

"Oh, if he were! But, Jennie, he needs a father's hand. I cannot do a thing with him. You know I have left him with mother, and she, poor, misguided soul, can see no fault in him, though he recklessly disobeys her and goes out night after night with a gang of rough boys. When I was home last he openly swore, and smoked cigarettes, and when I rebuked him, he said, 'Just like a woman to be poking into other folks' affairs.' Mother excused him by saying, 'He'll be wiser when he is older.' But I know better, and I am frightened, oh, horribly frightened, for my boy, and I am afraid to go home and combat with him, for I know that his will is stronger than mine, and kindness doesn't seem to work. He thinks I am only a woman."

For several moments the two women were silent; then the younger one spoke:

"Why don't you write to Tom, ask his forgiveness, and tell him you are will-

ing to go back and make a home for him again—"

"But," broke in the other, "you forget I don't know where he is, and besides, I don't know that I want to go back. I am afraid the lust for money has gotten into my veins so strongly."

"Nonsense," interposed the other, "not when you are weighing home and loved ones against it."

"Well," defiantly, "I didn't leave him. He left me."

"I am sorry, dear, but as I look at it I am afraid you did. How much time each week did you spend at home those first two weeks when he was there and you 'on the road'?" Then, as no answer was forthcoming, "Can't you lay down pride, own to doing wrong yourself, and beg forgiveness, for the sake of your child, or his child? If I know Tom, that will bring him."

"But I don't know where he is," came again in weary tones.

"Can't you find out in some way?"

A muffled "perhaps" was her only response.

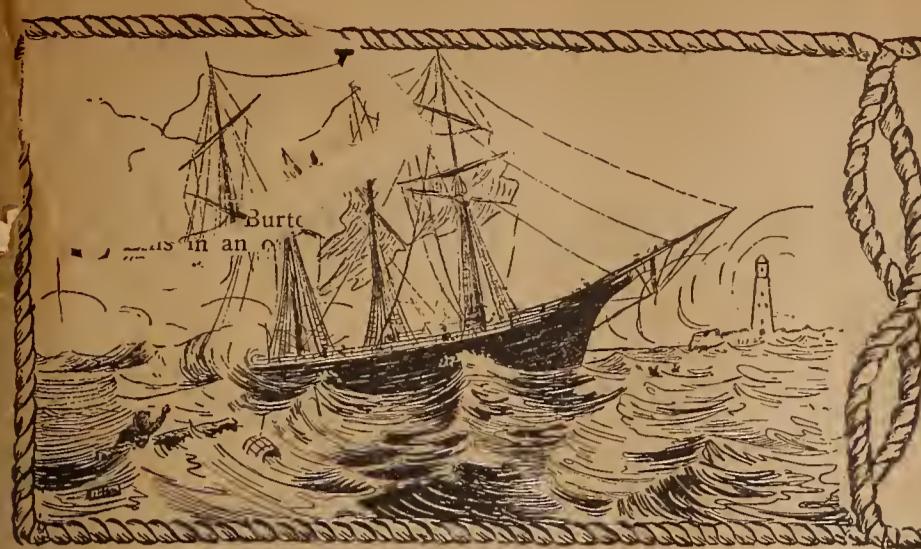
A little later Jennie drifted down into the sitting room, where her husband still sat reading, and abruptly pulled his paper away, and because it was their way, snuggled into his arms and told him all about it. "John," she finished, "I think I never was more thankful for any one thing in my life than that Cousin Stella came here to-night and told me her story. My horrid worldly ambition needed just such a mighty bounce to settle it into its proper place." Then, as was their custom, they climbed the stairs together and kissed the "three" good-night. "To think that I ever dreamed of leaving them—and you—just for the sake of mere worldly gain, the possession of the four walls of a house at the sacrifice of home."

The husband said little, but the light in his eyes and the way he drew her to him was proof of his approval.

Six months later came a long letter. "Dear Jennie," it ran, "I have taken your advice. Quite by accident I found out Tom's address, and wrote as you suggested, offering no reproaches, but keeping strictly to my side of the case. His reply almost broke my heart with joy and sorrow both. . . . He owned to drinking hard—and gambling—and told how he had longed for home. He said he'd been going straight to the bad for two years, but for Fred's sake he would gladly straighten up. . . . I don't think things will ever be quite the same again, but I can see an improvement in Fred already, and I don't think that Tom will drink any more."

"Ever your grateful cousin,

"STELLA."



The Two Captains

By John Barton Oxford

IN THE windows of the scattered houses of Sandy Cove lights were beginning to twinkle, when Captain Jim Afford came out of the post office and made his way down the crooked main street of the village toward the quarry docks, where his schooner, the "Mary Parker," was taking on her cargo of stone.

A thick, biting mist, drifting in from the bay, hastened the gathering darkness. In the gray gloom the houses on either side of the roadway were but mere ghostly shadows in the shrouding fog.

Afford turned up his coat collar and quickened his steps. He gained the docks, stumbled along the uneven boarding of the old wharf, where the schooner was berthed, and went aboard. Pushing back the closed hatch of the cabin companionway, he stamped noisily down the steps.

By the table, beneath the lighted lamp, the mate sat in his shirt sleeves, lost in the intricate mazes of a paper-covered novel. He closed the book and looked up expectantly as the captain came into the stuffy cabin.

"Been up to the post office," Afford announced quite superfluously.

The mate nodded. "Anything for me?" he demanded.

For answer Afford thrust a big paw into the inner pocket of his overcoat and drew out a handful of letters and two packages of papers. He came nearer the light and began peering at the superscriptions.

"This is yours, and this," he said, tossing two letters to the mate, "and one of these packages of papers. All the rest is mine."

The News from Dan

He threw off his coat and cap and settled himself comfortably beneath the light. On the opposite side of the table the mate was eagerly slitting open his letters. Afford, after much fumbling in his pockets, found his spectacles and perched them on his nose; then he scanned his own four letters, selected one addressed in a familiar sprawling hand, and ran the blade of his knife beneath the flap of the envelope.

For a time he read in silence, his eyes close to the scribbled sheets and his lips moving unconsciously as he followed the text. At length he indulged in a chuckle of pleasure and brought down his doubled fist resoundingly upon the table. The mate looked up inquiringly.

"Well, what do you think of that?" Afford demanded.

"Can't say till I know what it is I'm expected to give an opinion on," the mate observed.

"This letter I've just been reading is from Dan," the captain explained. "Gone up the line once more, he has. He's cap'n now. They've given him command of the 'Modoc'."

The mate whistled under his breath. "You don't say!" said he. "Stands in pretty well with the Kent Line folks, don't he?"

"Last time he was aboard of us down to Southport he told me there was a chance of his getting it," Afford went on, "but he wasn't really expecting it. That's a pretty good berth for a feller his age, eh, Ed?"

"Well, I guess he deserves it, all right," said the mate, "and I ain't slinging no bouquets just because he's your boy, neither. I always liked Dan. He's got the right stuff in him. I seen that long ago when he was a little shaver and used to go trips with us! Took to the sea as natural as a duck does to water, he did, and you could see then he had a way with him that was going to mean a lot to him when he grew up. A man that's born to command you can tell as far as you can see him, and Dan's one of that sort."

The captain's eyes glowed softly; there was a proud smile on his weather-beaten face. "Yes, Dan's a good boy," he said, "and he's worked hard for what he's got. I guess he's deserving of it. I always said he'd go a good deal farther than I ever could. He had all them things I lacked. I'm glad for him, and I hope this is only the beginning. I hope in time he'll get away from the Kent Line people and get command of a better craft than the 'Modoc' or any of the others of their fleet. Still, it's quite a thing for a chap no older than he is to have a position of responsibility. Twenty-eight last August, he was. That makes him the youngest master of a steam craft on the coast."

A Proud Moment for Captain Jim

"I always felt he'd never be stramming up and down the coast in these old tubs, as we do," said the mate. "Somehow or other I was certain when he first went in with the Kent Line as a quartermaster that it wouldn't be long before he had a command of his own. Fellers like him go up fast."

Afford rose and went into his stateroom. The mate could hear him shuffling about the cramped quarters. Presently he was back. There was a look half eager, half apologetic in his eyes. On the table he placed a bottle and two glasses.

"I've sorter been looking for something of the sort," he said.

He uncorked the bottle and filled the two glasses. One of them he pushed across the table toward the mate.

"Ed," he continued, "I wish you'd drink with me to the health and prosperity of Cap'n Daniel Afford."

They drained their glasses, and Jim Afford went up the steps of the companionway to the deck. The mist had thickened. Through it he could scarcely make out the looming derricks on the docks.

For a time he paced up and down the slippery length of the deck, from the starboard pump to the galley and back again, his rugged shoulders squared, his shaggy gray head thrown back, and the light of a pardonable pride shining in his eyes.

The clock on the village church chimed ten. Afford counted each vibrant stroke as it echoed along the docks.

"Ten o'clock," he mused. "The 'Modoc' must be somewhere off Gull Rock at this time. Nasty night to be running through the fog if you're on a schedule that you've got to keep somewhere near. But I'll risk Dan. Fog or clear, I'll bet he'll run her pretty close to her time. Twenty-eight, and the youngest captain in the fleet! A son worth having, Dan is."

The "Mary Parker" Runs into a Fog

Two days later the "Mary Parker," deep laden with her cargo of stone, was towed across the bay, and departed on her trip down the coast. It was bleak March weather. The wind from the northeast was raw and carried with it a piercing chill. Gray clouds hung in the sky and now and again stray flakes of snow came sifting down.

With all sails set, the schooner, on her southerly course, ran smartly before the breeze. By noon they were abreast of Cedar Cape, well down the coast, and at nightfall they had picked up the whistling buoy off Black Island. Shortly after nightfall the wind moderated considerably and a thin haze crept up from the sea. Momentarily it grew thicker, until from the wheel it was almost impossible to distinguish the dim form of the lookout in the bow.

Captain Afford paced to and fro by the wheel. Now he shot a quick glance at the binnacle to note their course; now he listened to the brazen note of the horn, booming in hollow fashion through the fog. What remained of the breeze still hung to the northeast. An inspection of the log's register told him they were making some six knots.

All about them the fog shut them in with impenetrable walls; it seemed to isolate them in a little world of their own—a gray, silent world, the stillness of which was broken only by the lap of water at the bow, the creaking of the rigging and the monotonous wail of the horn in the hands of the lookout.

Afford pulled out his watch, and holding it close to the light from the binnacle, noted the time. It was half-past eight. "Dan ought to be up somewhere 'round Windy Point," he mused. "Must have passed us an hour or more ago. Most likely that feller I heard honking to wind'ard some time ago was him. I should hate to be running through this with a cargo of passengers that I was responsible for. But it's different with him. He's younger, and it would take more than fog to shake his nerve. He's had plenty of rotten weather since he took the 'Modoc.' There ain't no doubt of that."

He shut his watch with a click, his eyes mechanically seeking the dial in the binnacle.

"Sou'-sou'west," he said sharply to the man at the wheel, as he noticed the schooner was a full point off her course.

"Sou'-sou'west, sir," the man responded, shifting the wheel

The Crash in the Dark

Scarcely were the words out of his mouth, when from dead ahead came the hoarse bellow of a whistle; it was so close that its din set the ear drums throbbing. At the same time came the unmistakable clanking thrash of revolving paddle wheels.

In the bow the lookout pumped his horn with the desperation of despair; its note seemed a ridiculously inadequate answer to the braying challenge of the booming siren.

Afford, bellowing an order which was lost in the din, sprang to the wheel. Already the man had jammed it hard down, but Afford threw his whole weight against it as he tugged with all his strength as if he were trying to swing the schooner from the impending crash.

Lights flashed out of the darkness not a length away. Deep laden as she was, and consequently slow in answering her helm, the "Mary Parker" bore straight for the white hull, which seemed to spring from the fog.

There was a moment of deathly silence; then wild yells, oaths, an ear-splitting bellow from the whistle; a terrific crash; a grinding, grating crunch.

The shock of the impact hurled Afford to the deck. For a moment he was stunned, helpless. Then he scrambled to his feet. Blood was streaming into his eyes from an ugly cut on his temple.

The steamer, heeled far to port, a gaping hole in her side, had shaken herself free from the schooner. As she drifted away into the fog, Afford could clearly

see the name "Modoc" in the great gold letters beneath her pilot house. Then the fog swallowed her as suddenly as it had thrown her into the range of vision.

"We Have Got to Stand by the 'Modoc'"

Jim Afford clutched the rail to steady himself. Those flaring letters beneath the steamer's pilot house seemed searing his brain like so many branding irons. Something rose in his throat, momentarily strangling him.

"Oh, God!" he groaned. "Oh, my God!"

Then the paralyzing sense of helplessness left him. His mind seemed preternaturally clear. He ran forward to where the wrecked head gear littered the deck and trailed over the starboard rail. He swung himself over the bow and made a hurried inspection.

"Get those pumps working, quick," he yelled.

He was aware that the mate, wild eyed, was scurrying along the deck in his underclothes, just as he had tumbled out of his berth below. Afford caught his arm in a grip of iron.

"Clear away that wreckage for'ard," he bellowed. "We can keep her afloat for some time yet. That was the 'Modoc' we rammed. We've got to stand by her as long as we can."

The pumps creaked; forward the sound of quick ax strokes told that the wreckage was being cleared. Across the water came the staccato blasts from the siren of the stricken steamer.

Afford ran to the wheel, threw the crippled schooner into the wind, then catching up an ax, ran forward to lend a hand with the work there.

"Get at it," he shouted to the men who were working like mad. "Clear this away, and we'll work to wind'ard and stand by to help 'em. Look alive. There's no time to lose. We can keep afloat for hours, but God knows they can't. Keep the horn going there, to let 'em know where we are."

In an incredibly short time the wreckage was cleared. Afford stumbled to the wheel, shouting to the mate to get the boat ready to lower. Whether or not he could work to windward with most of his head gear gone was a grave question, but at least he could make the attempt.

Scarcely had he caught the wheel in his hands, when from the fog came theplash of oars and a strident hail. The man with the horn redoubled his efforts; out of the pall of mist came a boat with six men. The quick, sharp bleats of the siren still rang across the sea.

Afford ran to the rail as the boat came alongside. The man in the stern stood up and caught the schooner's rail. Jim Afford staggered back with a choking cry.

Captain Jim's Lesson to His Son

"Dan!" he said. "Dan! For God's sake, boy, what are you doing here?"

The other five men in the boat were tumbling helter-skelter over the rail. Dan Afford stood very white and straight in the boat, staring dazedly into his father's eyes. Then he, too, started to climb over the rail.

From Jim Afford's throat came a cry of rage and disappointment that was almost a scream. He leaped forward; his great fist shot out and caught his son full in the face. He toppled backward and lay prone across the thwarts of the boat. Like a cat Jim Afford was over the rail and beside him.

"Send four of the men here," he roared to the mate, "and keep your horn going, so they can find their way back. I'm going over to the 'Modoc'."

Silently the four men took their places and picked up the oars. Silently they rowed away into the fog, Jim Afford, his eyes blazing, his face white and ghastly, holding the tiller.

The screech of the whistle had ceased, but through the fog came a faint, distant sound of agonized voices, that told them the location of the doomed craft. Steadily the boat was pulled in that direction. The sound of voices was growing nearer, when Dan Afford stirred uneasily and opened his eyes.

Then dimly they made out a great dark bulk close at hand. The "Modoc," her bow under water, her stern high in the air, loomed before them. On her canted decks men and women were clinging to the rail.

"Set us alongside," Jim Afford yelled above the din.

The boat ground against the sinking steamer's side, and half lifting, half carrying his son, Jim Afford stepped to the slippery deck.

"Women first! Keep back!" he yelled to the men who surged toward the boat.

His great fists shot out; the men who had rushed forward went down like logs. Afford caught up the women nearest him and began tumbling them into the boat; but before he had transferred a half dozen, the deck beneath his feet began to quiver. The wreck reeled crazily; there was a mighty gurgling of water.

"Stand clear," he yelled to the men in the boat. "She's going down!"

The "Modoc's" stern rose high in the air; her bows plunged beneath the sea. For a moment she quivered and shook like some living thing in the grip of death. Then, with Jim Afford standing by the rail, his tense fingers gripping his son's arm, she went down in a rush of waters.

Household

Department

Renovating Straw Hats

THE simplest method of cleaning white or natural-color straw hats is with oxalic acid and lukewarm water. Use about one teaspoonful of the powder in half a saucerful of water. Lay the hat on a flat surface and scrub all over with a tooth brush dipped in the solution. Do this as quickly as possible. Have a basinful of warm water at hand; dip a sponge in, and squeeze half dry, going over and over the hat, then wipe as dry as possible with clean, soft cloths. Fill the crown half full of paper, to keep it from sinking as it dries.

A coarse straw can be cleansed by scrubbing with warm water and soap. When dry, brush over with the white of an egg. This method is not altogether safe for hats of fine straw, as it might easily destroy the shapes.

Colored straws may be brightened by rubbing over with ammonia and water in the proportion of two teaspoonfuls of ammonia to half a pint of water. In rubbing a hat with this solution or any other, begin at the middle of the crown and wipe around the way of the straw.

The best method of renovating shiny black straw hats is by applying a solution made of pulverized black sealing wax and alcohol. Mix half an ounce of the wax with half a pint of alcohol. Put the bottle containing the mixture in a warm place, and shake frequently. When it becomes a thick cream it is ready to apply.

All dust should be carefully brushed away before any solution is applied to the hat. When the cleansing has been done with a watery solution, such as the ones above mentioned, the hats usually require pressing. They should be covered with a damp rag and pressed very heavily with a moderately hot iron.

If the straw is too greatly discolored or too faded to respond to the treatments that have been recommended, it should be gone over with any one of the prepared dyes which come for the purpose. Full directions for their use are given on the packages.

Helps for the Housewife

GREASE spots can be removed from wall paper by rubbing gently with soft bread crumbs. Pack the crumbs lightly in a small ball, and work with a rotary motion.

For iron rust use lemon juice and salt. When dry, wash in clear water. An obstinate spot of iron rust will yield at first trial by this method: Cover thickly with powdered alum, and lay over the open top of a tea kettle of boiling water. Steam about ten minutes.

To remove mildew, soak the article in sour milk, and lay in the sunshine to dry. Repeat if necessary. As soon as the mildew disappears, rinse thoroughly.

To remove sirup stains from materials, wash the stained part with warm water, without soap, then rub with ammonia diluted with warm water.

Ink stains may be removed from carpets while they are still wet by sponging them thoroughly with skimmed milk until the ink has disappeared, after which the spot must be sponged repeatedly with clear, cold water, followed by warm water, and rubbed dry with a cloth.

When baiting a mouse trap that has been used, be sure to scald it first. Although you may not detect a mouse odor about it, the mouse will do so and avoid the trap.

Lamp burners should be cleaned occasionally by putting them in boiling water containing washing powder and brushing with an old tooth brush. The latter is a good thing to use daily when trimming lamps, as it keeps the small holes clean.

Summer Salads

POTATO SALAD—Six cold boiled potatoes, three hard-boiled eggs, one sliced onion and one stalk of celery. Chop all together, and mix with mayonnaise dressing.

LIMA-BEAN SALAD—Boil until tender one cupful of lima beans. When cold, add three diced potatoes and one large stalk of celery chopped fine. Cover with mayonnaise dressing.

CUCUMBER SALAD—Chop fine four fresh cucumbers, and let them stand one hour in salt water. Then drain, and mix with one half cupful of chopped parsley and one chopped onion. Season with salt and pepper and add one half cupful of vinegar. Serve on lettuce leaves.

CUCUMBER CANOES—Cut cucumbers in half lengthwise, and scoop out the inside as carefully as possible, leaving a nice firm boat. Put the boats on ice or in a very cool place. Chop cucumber meat, and soak for one hour in salt water. Press as dry as possible, and mix with one cupful of chopped nuts (any kind), two teaspoonfuls of chopped parsley and one grated onion. Mix with mayonnaise and fill the boats.

Egg LILIES—Drop hard-boiled eggs into cold water, but take out and shell while still warm. With a silver knife cut narrow strips from the small end very nearly to the large end of the white, and lay carefully on a large lettuce leaf. Lift out the yolks, and rub them with one teaspoonful of butter to each yolk, one of vinegar, mustard, salt and pepper to taste. Form in balls, and put back in the whites to carry out the effect of lilies. Not hard to make and very pretty.

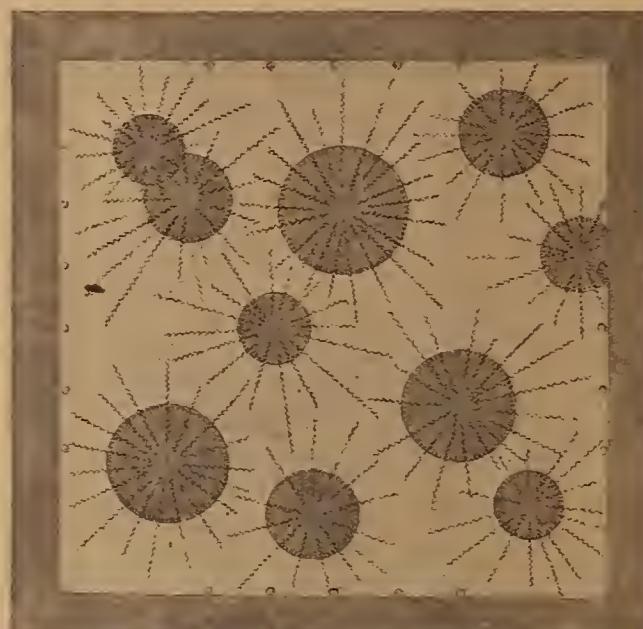
STUFFED-TOMATO SALAD—Scoop out the seeds after taking one slice off large red tomatoes. Chop together one onion, one celery heart and one hard-boiled egg for each two tomatoes. Season to taste, and mix with mayonnaise dressing. Fill tomatoes, and serve on lettuce leaves or in a ring of sliced green sweet pepper.

Practical Slip Covers for Cushions

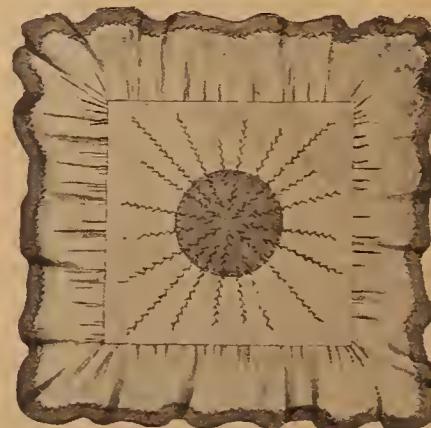
THE need for fresh, easily laundered pillow covers is always felt in the summer, for dust and summer showers make frequent visits to the tub imperative. A cover that is at once pretty and practical is pictured below. It is very simple to make and no stamped design is necessary. There is another unusual advantage in this cover—in making it one can regulate the amount of work by the amount of time one has to spend.

Cut a piece of thin white lawn, plain or crossbar, one inch larger than the pillow one wishes to cover, then cut a piece the same size of deep blue lawn, which should be fast color. Baste the two together, lay on a hard surface, and with a lead pencil draw circles of various sizes lightly on the white lawn. These may be placed irregularly, according to the illustration, or may be arranged after some original design. If one has not a pair of compasses, one may simply draw around glasses or teacups of various sizes. The number of circles may be varied, according to choice.

Work each of these circles in white mercerized working cotton with the old-fashioned blanket stitch. Blanket stitch is a coarse buttonhole, the stitches being at least an eighth of an inch apart and nearly a fourth of an inch deep. Be careful to stitch through the lining



The New Cushion Cover Finished With a Straight Band



Washable Pincushion Cover

each time. When the circles are all worked, cut the lining away, leaving it only under the disks.

Next draw straight radiating lines of varying lengths from the center of each circle; cover these lines with feather stitching in two shades of blue working cotton. Do not bring the feather stitching quite to the center of the disks, as that would make it look crowded. The effect of the blue stitching and the blue lawn showing through the disks is very pretty.

For a finish, make up the slip with a plain band of the blue, or blue covered with white lawn if preferred. This band is to be cut four and one half inches wide and folded in the middle. As a finishing touch it is much newer than the ruffle.

After pressing the embroidered piece carefully, the slip may be put together in the usual manner, only leaving at least six inches of the back unsewed. Sew three or four buttons on the edge of this opening, and work buttonholes neatly in the embroidered part. Buttons may be sewed on the other three sides, for the sake of uniformity.

The pincushion slip is made in the same manner as the pillow cover, excepting that only one circle is worked. There will be plenty of blue lining left from the pillow cover which may be used for this.

Mount the pincushion with a ruffle of white lawn, and finish the edge of the ruffle by turning up a hem over a half-inch strip of the blue lawn and feather stitching it all around.

For a small wash slip of this kind it is well to arrange the back in two parts, hemming the edges, so that the pincushion may be readily slipped in and out for laundry purposes.

The Arrangement of Cut Flowers

ALTHOUGH nearly every one loves flowers and enjoys seeing them in the home, not every one possesses the happy talent which enables her to arrange them artistically.

So much of their beauty, even in the commonest bouquets, is marred by thoughtless blundering hands or enhanced by skilful fingers, that a few hints regarding their arrangement may not be out of place.

First let me say a word about the receptacles used for cut flowers. As a rule, the more inconspicuous the vase is, the better is the effect obtained. It should be what a frame is to a picture—that is, merely a suitable setting.

Plain little glass vases or bowls are always appropriate.

The rose, dahlia or any of the long, stiff-stemmed varieties look best in tall vases. Flowers with limber, soft stems, like nasturtiums, look well in a bowl with a few of their little bright faces straying or drooping about the sides.

Good taste in the arrangement of flowers can be cultivated, at least in a measure. Copy Nature as nearly as possible. There will be none of that inharmonious mixing of kinds, which produces those fearful and wonderful creations sometimes seen, consisting of geraniums, nasturtiums and pansies with bachelor's buttons or marigolds, and sweet alyssum or phlox with a few tall sprigs of asparagus or sweet-scented rose geranium leaves for greenery, the whole tied together with a stout string. The very colors cry out in protest and beg for a chance to display their charms without the killing influence of their equally abused neighbors.

There are flowers, however, which look well together, but the amateur, especially if she has the slightest doubt about the harmony of her selections, will do well to stick to one variety. That is always good taste. So, also, is a generous amount of foliage, preferably their own, mixed loosely among the flowers.

Never tie a bouquet. It loses all its graceful charm and much of its beauty by the crowding thus caused. Also never cut short, flowers which naturally have long stems.

Cut sweet peas, a few or a huge bunch, according to the size of your receptacle, arrange with them a few sprays of asparagus or ferns, and drop them all loosely into your bowl or vase, allowing them to stay as they have fallen, except, perhaps, for a gentle shaking. The effect is far more natural than any "arrangement" you could possibly make.

The larger flowers—roses, dahlias, chrysanthemums, etc.—look well massed in a large vase with one or two shorter stems drooping about the sides; or almost equally as pretty and still daintier is a single lovely specimen with two or three buds and a bit of foliage gracefully arranged in a slender little vase.

Violets or pansies are most effective if loosely arranged with an abundance of their own foliage in very low glass bowls.

Poppies are lovely when cut and placed in water, but unfortunately they fade quickly. However, it is said that if they are cut in the early morning, and the severed ends at once charred with a match, they will remain fresh for several days. What the theory is I do not know, but it is worth trying.

It is well to know that if flowers are placed near a mirror their beauty is doubly enhanced. Quite a common and lovely idea for a centerpiece is a bowl of nasturtiums or sweet peas placed upon a round or oval mirror possibly three times the size of the bowl. The edges of the mirror are hidden in a low bank of greenery.

A dish of nasturtiums at one end of an oblong stand or table, with a bowl of goldfish at the other, makes a charming picture.

If flowers placed in a bowl or vase are inclined to tumble out or make it top heavy, two or three stones may be placed among the stems in the bottom of the vase, and will usually be found to be all that is necessary to keep the vase upright. If the vase happens to be transparent, so much the better. The green stems amidst the water-magnified beauty of the stones are very charming indeed.

Let us use flowers freely and commonly upon our dining tables and within every room in our homes. A lovely bowl of sweet peas or nasturtiums in the kitchen will bring many a pleasant thought to the tired housemother, and what could show more tender thoughtfulness of a guest than a rose or a few sweet peas in a dainty little vase upon her dresser?

Caraway-Seed Cake

PUT three fourths of a pound of flour and six ounces of butter or beef dripping in a bowl, and with the tips of the fingers rub the two ingredients together until the whole mass has the appearance of bread-crumbs. Shake over this one tablespoonful of caraway seeds, and mix in well with a wooden spoon. Add one teaspoonful of baking powder, one half pound of good brown sugar, a little citron chopped up very small, and mix all well together.

In making a cake of this kind the mixing is the part that is of the most importance; it must be well done and is rather hard work. Make a hole in the center of the mixture and pour in three well-beaten eggs, one small cupful of milk, or as much as will make the cake thick enough for a spoon to stand up in it. Bake in a moderate oven about one hour and fifteen minutes. The cake should be placed in a warm part of the oven for fifteen minutes, then moved to a cooler part for the rest of the time.

By the Rule of Contrary

By L. M. Montgomery

"Look here, Burton," said old John Ellis in an ominous tone of voice, "I want to know if what that old busybody of a Mary Keane came here to-day gossiping about is true? If it is—well, I've something to say about the matter! Have you been courting that niece of Susan Oliver's all summer on the sly?"

Burton Ellis' handsome, boyish face flushed darkly crimson to the roots of his curly black hair. Something in the father's tone roused anger and rebellion in the son. He straightened himself up from the turnip row he was hoeing, looked his father squarely in the face, and said quietly:

"Not on the sly, sir. I never do things that way. But I have been going to see Madge Oliver for some time, and we are engaged. We are thinking of being married this fall, and we hope you will not object."

Burton's frankness nearly took away his father's breath. Old John fairly choked with rage.

"You young fool," he spluttered, bringing down his hoe with such energy that he sliced off half a dozen of his finest young turnip plants, "have you gone clean crazy? No, sir, I'll never consent to your marrying an Oliver, and you needn't have any idea that I will."

"Then I'll marry her without your consent," retorted Burton angrily, losing the temper he had been trying to keep.

"Oh, will you indeed? Well, if you do, out you go, and not a cent of my money or a rod of my land do you ever get."

"What have you got against Madge?" asked Burton, forcing himself to speak calmly, for he knew his father too well to doubt for a minute that he meant and would do just what he said.

"She's an Oliver," said old John crustily, "and that's enough." And considering that he had settled the matter, John Ellis threw down his hoe and left the field in a towering rage.

Burton hoed away savagely until his anger had spent itself on the weeds. Give up Madge—dear, sweet little Madge? Not he! Yet if his father remained of the same mind, their marriage was out of the question at present. And Burton knew quite well that his father would remain of the same mind. Old John Ellis had the reputation of being the most contrary man in Greenwood.

When Burton had finished his row he left the turnip field and went straight across lots to see Madge and tell her his dismal story. An hour later Miss Susan Oliver went up the stairs of her little brown house to Madge's room and found her niece lying on the bed, her pretty curls tumbled, her soft cheeks flushed crimson, crying as if her heart would break.

Miss Susan was a tall, grim, angular spinster who looked like the last person in the world to whom a love affair might be confided. But never were appearances more deceptive than in this case. Behind her unprepossessing exterior Miss Susan had a warm, sympathetic heart filled to the brim with kindly affection for her pretty niece. She had seen Burton Ellis going moodily across the fields homeward and

guessed that something had gone wrong. "Now, dearie, what is the matter?" she said, tenderly patting the brown head.

Madge sobbed out the whole story disconsolately. Burton's father would not let him marry her because she was an Oliver. And oh, what would she do?

"Don't worry, Madge," said Miss Susan comfortingly. "I'll soon settle old John Ellis."

"Why, what can you do?" asked Madge forlornly.

Miss Susan squared her shoulders and looked amused.

"You'll see. I know old John Ellis better than he knows himself. He is the most contrary man the Lord ever made. I went to school with him. I learned how to manage him then, and I haven't forgotten how. I'm going straight up to interview him."

"Are you sure that will do any good?" said Madge doubtfully. "If you go to him and take Burton's and my part, won't it only make him worse?"

"Madge dear," said Miss Susan, busily twisting her scanty, iron-gray hair up into a hard little knob at the back of her head before Madge's glass, "you just wait. I'm not young, and I'm not pretty, and I'm not in love, but I've more gumption than you and Burton have or ever will have. You keep your eyes open and see if you can learn something. You'll need it if you go up to live with old John Ellis."

Burton had returned to the turnip field, but old John Ellis was taking his ease with a rampant political newspaper on the cool veranda of his house. Looking up from a bitter editorial to chuckle over a cutting sarcasm contained therein, he saw a tall, angular figure coming up the lane with aggressiveness written large in every fold and flutter of shawl and skirt.

"Old Susan Oliver, as sure as a gun," said old John with another chuckle. "She looks mad clean through. I suppose she's coming here to blow me up for refusing to let Burton take that girl of hers. She's been angling and scheming for it for years, but she will find who she has to deal with. Come on, Miss Susan."

John Ellis laid down his paper and stood up with a sarcastic smile.

Miss Susan reached the steps, and skinned undauntedly up them. She did indeed look angry and disturbed. Without any preliminary greeting she burst out into a tirade that simply took away her complacent foe's breath.

"Look here, John Ellis, I want to know what this means? I've discovered that that young upstart of a son of yours, who ought to be in short trousers yet, has been courting my niece, Madge Oliver, all summer. He has had the impudence to tell me that he wants to marry her. I won't have it, I tell you, and you can tell your son so. Marry my niece indeed! A pretty pass the world is coming to! I'll never consent to it."

Perhaps if you had searched Greenwood and all the adjacent districts thoroughly you might have found a man who was more astonished and taken aback than old John Ellis was at that moment, but I doubt it. The wind was completely taken out of his sails and every bit of the Ellis contrariness was roused.

"What have you got to say against my

son?" he fairly shouted in his rage. "Isn't he good enough for your girl, Susan Oliver, I'd like to know?"

"No, he isn't," retorted Miss Susan deliberately and unflinchingly. "He's well enough in his place, but you'll please to remember, John Ellis, that my niece is an Oliver, and the Olivers don't marry beneath them."

Old John was furious. "Beneath them indeed! Why, woman, it is condescension in my son to so much as look at your niece—condescension, that is what it is. You are as poor as church mice."

"We come of good family, though," retorted Miss Susan. "You Ellises are nobodies. Your grandfather was a hired man! And yet you have the presumption to think you're fit to marry into an old, respectable family like the Olivers. But talking doesn't signify. I simply won't allow this nonsense to go on. I came here to-day to tell you so plump and plain. It's your duty to stop it; if you don't I will, that's all."

"Oh, will you?" John Ellis was at a white heat of rage and stubbornness now. "We'll see, Miss Susan, we'll see. My son shall marry whatever girl he pleases, and I'll back him up in it—do you hear that? Come here and tell me my son isn't good enough for your niece indeed! I'll show you he can get her, anyway."

"You've heard what I've said," was the answer, "and you'd better go by it, that's all. I sha'n't stay to bandy words with you, John Ellis. I'm going home to talk to my niece and tell her her duty plain, and what I want her to do, and she'll do it, I haven't a fear."

Miss Susan was half way down the steps, but John Ellis ran to the railing of the veranda to get the last word.

"I'll send Burton down this evening to talk to her and tell her what he wants her to do, and we'll see whether she'll sooner listen to you than to him," he shouted.

Miss Susan deigned no reply. Old John strode out to the turnip field. Burton saw him coming, and looked for another outburst of wrath, but his father's first words almost took away his breath.

"See here, Burt, I take back all I said this afternoon. I want you to marry Madge Oliver now, and the sooner, the better. That old cat of a Susan had the face to come up and tell me you weren't good enough for her niece. I told her a few plain truths. Don't you mind the old crosspatch. I'll back you up."

By this time Burton had begun hoeing vigorously, to hide the amused twinkle of comprehension in his eyes. He admired Miss Susan's tactics, but he did not say so.

"All right, father," he answered dutifully.

When Miss Susan reached home she told Madge to bathe her eyes and put on her new pink muslin, because she guessed Burton would be down that evening.

"Oh, aunty, how did you manage it?" cried Madge.

"Madge," said Miss Susan solemnly, but with dancing eyes, "do you know how to drive a pig? Just try to make it go in the opposite direction and it will bolt the way you want it. Remember that, my dear."

From the Joke Makers

Fruit of the Tree of Knowledge

A WASHINGTON man, while visiting a friend's place in Virginia, became much interested in his experiments in fruit culture.

One day the visitor was making the rounds of the place, being in charge of the friend's young daughter of ten, who acted as guide.

"This tree seems to be loaded with apples," observed the Washingtonian, indicating a particularly fine specimen.

"Yes, sir," assented the little girl; "father says this is a good year for apples."

"I am glad to hear that," said the visitor. "Are all your trees as full of apples as this one?"

"No, sir," explained the girl, "only the apple trees."—Harper's Weekly.

Force of Habit

THERE is a certain Western congressman whose boundless affability and habitual absent-mindedness have occasionally led him into absurd mistakes. One day, during his last campaign, as he stepped from the train at the station of his home town after an arduous two weeks of

stumping and "glad handing," his little daughter rushed up to him and kissed him. The congressman beamed upon her with a proud and tender parental eye.

"Well, well!" he exclaimed, "if it isn't my little Alberta!" Then he added mechanically, "And how is your dear old father?"—Success Magazine.

Misunderstood

THE American small boy's mama sent him to kindergarten in the Canadian city where he was visiting. All the exercises delighted him, but closing day sent him home in excitement. "They sang, mother, and played games, and then every one stood up and sang 'For God's Sake, Save the King!'"—Harper's Monthly.

Another Twain Story

BISHOP WILLIAM CROSWELL DOANE, of Albany, was at one time rector of an Episcopal church in Hartford, and at this church Mark Twain was an occasional attendant. Twain one Sunday played a joke on the rector.

"Doctor Doane," he said at the end of the service, "I enjoyed your sermon this morning. I welcomed it like an old

friend. I have, you know, a book at home containing every word of it."

"You have not," said Doctor Doane.

"I have so," said the humorist.

"Well, send that book to me. I'd like to see it."

"I'll send it," Twain replied.

The next morning he sent to the rector an unabridged dictionary.

Military Discipline

THE customs of military service require officers to visit the kitchens during cooking hours to see that the soldiers' food is properly prepared. One old colonel, who let it be pretty generally known that his orders must be obeyed without question or explanation, once stopped two soldiers who were carrying a soup kettle out of the kitchen.

"Here, you," he growled, "give me a taste of that."

One of the soldiers ran and fetched a ladle and gave the colonel the desired taste. The colonel spat and spluttered.

"Good heavens, man! You don't call that stuff soup, do you?"

"No, sir," replied the soldier meekly; "it's dish water we was emptyin', sir."—Everybody's Magazine.



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Last Week's Washing

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A Little Gold-Mine for Women

The U. S. Cook-Stove Fruit-Drier Dries all kinds of Fruits, Berries, Cherries, Corn, Vegetables, etc. It takes no extra fire. Always ready for use, and will last a lifetime. It works while you cook. Write for circulars and special terms to agents. Price \$5.

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Cleanses and beautifies the hair. Promotes a luxuriant growth. Never fails to restore Gray Hair to its Youthful Color. Cures scalp diseases & hair falling. 50c. and 100c. at Druggists.

RED BOOK ON FIGURES FREE

32 page book. Simplified figuring on RAPID CALCULATOR. The ONLY book of its kind. Be a RAPID CALCULATOR. Ten cents for mailing charges.

FRANK MALONE, 86 Mills Building, St. Louis, Mo.

Miss Gould's Fashion Page



A simple evening gown with stenciled bands, which will cost, including the fabric and the trimming for the dress, as well as the materials for stenciling, \$3.90.

THE stenciled dress is recommended by Dorothy Tuke to the girl who makes her own clothes, for five very good reasons: First, the art of stenciling is very easily acquired. Second, it can be done at little or no cost. Third, it can be applied to the most inexpensive materials and still give a handsome effect. Fourth, if properly done, stenciling is washable. Fifth, it gives endless scope for original designs and pretty color schemes.

The stenciled design of little violets illustrated on this page makes a most effective dress. It is easy to do, since it is done in but one shade of violet. Also, the design looks equally well running perpendicularly or horizontally, and moreover there can be no difficulty with the repeat. This saves a good deal of planning and contriving.

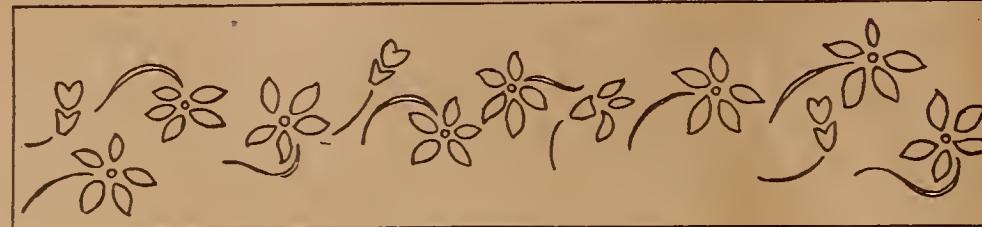
Usually, in making a stenciled dress, the waist must be cut out and then stenciled, and the skirt cut out, the seams sewed and the hem turned up and basted before the stenciling can be done. If at this stage of the work a mistake is made in the stenciling, much time is lost and often good material is wasted. Hence it is safer to make a dress similar to the one here shown, where yards of the stenciling can be done on a straight piece of the material, and afterward applied like insertion.

The dress shown should be either white or pale lavender, stenciled in a deeper shade of violet. Lawn, dotted swiss, silk mousse-line or mull are suitable materials to use. The stenciled bands that trim the dress should be two and one half inches wide, finished off on either side with a lace edging. The girdle should be of lavender messaline, as should also the bows on the sleeve.

The first step in making a stenciled dress



No. 1081—Box-Plaited Sailor Suit
Sizes 6, 8, 10 and 12 years.



The Stenciling Design

is to trace the design on stencil paper—a heavy waxed paper that can be bought at an artist's supply store for fifteen cents a square yard. Then the design must be cut out with a sharp knife, placing a piece of glass underneath, to insure a clean edge.

Dyes are preferable to paint for stenciling on sheer materials, as they can be made very thin with water and give a clear, flat effect. The dyes should be mixed with a little gum tragic or egg albumen, to insure their being fast. After the work is done, the stenciling should be ironed on the back with a hot iron, as this sets the color.

The ordinary brushes sold for stenciling are too large for the fine work on dresses, so it is best to buy what are known as "markers." The bristles should be cut down to make them not more than half an inch long. A long board covered with a sheet, or an old ironing board, is an excellent thing to stencil upon. Before laying the material in place, sheets of blotting paper should be laid on the board, as this absorbs the dye through the material. This is essential when stenciling on thin goods. After the material has been fastened firmly to the board with thumb tacks, the stencil may be laid in place and pinned down securely.

Before applying the color, wipe the brush once or twice on a piece of cloth or blotting paper, as it is dangerous to work with a wet brush. Care should be taken, in lifting the stencil, not to smudge the work, and the worker must remember to wipe the stencil off the wrong side after each application.

If the violet design is used on white, use the palest shade of lavender possible. If applied to lavender, a deeper shade may be used. Always remember, the design must always melt in and not stand out.

When washing a stenciled dress, first set the color by letting the dress soak for an hour or more in cold salt water. Then wash in lukewarm water and soapsuds, and hang out at once to dry. The dress should be ironed while damp.

Stenciling requires no outfit, and the few things needed can be readily obtained. If the stencil paper cannot easily be procured, a good substitute can be made by giving a sheet of manila paper a coat of shellac on both sides. Dyes of any sort can be used for stenciling, but those sold in tubes for fifteen cents are preferable. One tube of dye will last indefinitely, as a thimbleful of dye, when mixed with water and a fixative, will make sufficient coloring for many yards of stenciling.

If dyes, however, are not at hand, paint can be used. Dry paint can always be had from the local painter. Buy five cents' worth of each of the three primary colors—red, blue and yellow—ten cents' worth of turpentine and also of Japan drier, and five cents' worth of whiting or dextrin. In stenciling with paint it is necessary to use whiting or dextrin to get the pale shades, as paint must not be thinned out with water, like dye, but must be kept the consistency of thick cream.

In mixing the paint to do the violet stencil, take half a tablespoonful of red paint, three fourths of a teaspoonful of blue paint and two tablespoonfuls of dextrin or whiting. Then thin out to the right consistency with two parts turpentine to one of Japan drier. An old cup makes a very good receptacle for the paint.

However, let me repeat that dye gives a flatter, clearer effect than paint, and is therefore better for thin material.

The following is an itemized account of what the dress illustrated on this page should cost:

14 yards of muslin lawn at 12½ cents	\$1.75
24 yards lace edging at 5 cents	1.20
½ yard lavender messaline	.50
	\$3.45
2 stencil brushes	.10
1 tube dye	.15
2 sheets blotting paper	.10
1-3 yard of stencil paper	.05
Thumb tacks	.05
	.45
	\$3.90

then again it has a three-quarter sleeve. With a satin gown it may be of chiffon or all-over lace, while with a piqué or any cotton fabric it is often a mass of heavy embroidery.

The Vogue of the Guimpe

THE guimpe still remains fashionable, and few dresses are complete without it, though it is, of course, out of the question in the case of suits. What is also favored is the long, heart-shaped opening, quite narrow and often extending the entire length of the corsage. This is filled up with lace or embroidery of a very transparent character, the lower part of which alone is lined.

Neckwear Novelties

FRILLS and furbelows, these tell the story of dress accessories that fashionable women are now wearing. High, fine-lace stock collars, the higher the more fashionable, particularly when the height is in the back; these for costumes, guimpes and dressy separate waists. Embroidered and lace-trimmed stiff and semi-stiff collars for general wear, especially for the tailored suits appropriate for morning wear; or else the high-pointed collars of Irish crochet lace; and always with these a fluffy jabot or big bow of lace, mull, or net trimmed with lace.

Smart Summer Hats

MANY beautiful hats are seen in the new shades of dull blue which go under so many different names, such as Nattier, Delft, Copenhagen and paon or peacock blue. The latter is much softer in tone than the peacock we have heretofore known, and more generally becoming. Another effective combination with brown is nasturtium, which borders on the flame color. The soft shades of rose and cherry are being much used in millinery, while for costumes soft shades of yellow are frequently seen. The white hat bids fair to be the hat of the summer season, sometimes entirely white, but more often touched up with delicate tones of color.

About the Bandeau

THE absence of the bandeau is a conspicuous feature of the season's hats, whether they be large, medium or small. In other words, the new hats set well down over the hair, and actually fit the head. A head-size bandeau is generally used by the best milliners. This is a velvet-covered affair, and is used in order to insure the good fit as well as to guard in some measure against the hat's slipping out of place than because of any style quality. "The hat which owes its style to the tilting by the bandeau is no longer fashionable, yet the bandeau is essential to comfort," said a fashionable milliner recently.

Mourning Millinery

MOURNING millinery is much more attractive than it used to be, and the wearing of it no longer implies discomfort. Of course, one big reason for this is that women are much more independent in regard to their dress than they used to be. Widows' veils are shorter and the crape used is decidedly lighter than that in vogue five years ago.

The widow's ruche may be worn or it may be omitted. It is no longer a compulsory fashion edict, but is purely a matter of personal preference. Generally speaking, if it is becoming it is worn; if not, it isn't.

Round hats are very much worn, and at present the larger they are, the more fashionable. It is quite the smart thing to wear a rather long crape veil with a round hat. The crape veil with a deep, bias hem is considered extremely good style. The face veils are trimmed with either narrow bands of crape or dull black ribbon. Wings are much used in the trimming of mourning hats, and also dull taffeta rosettes made with a crape center.



A Group of Specially Pretty Belts Made of New Ribbons

tage. Select the color most becoming, then buy sufficient belting not only for the belt, but to make a stock and a band to encircle the crown of the hat. The belting for the stock may form just a plain collar, or it may be used in connection with a soft ribbon, which ties in a smart-looking bow, and the belting is then drawn through the two upper loops. A stock and neck bow of this description would look very effective made of dark-blue belting showing an Empire-green embroidered design, with fancy taffeta ribbon for the bow and ends, the ribbon being also dark blue with a big green fancy dot for its decoration.

Fashions for Children

NEW and practical ideas in aprons for small girls are always a crying need with the busy mother who makes her little daughter's clothes. The princess apron illustrated on this page is a pattern worth trying, and looks particularly well made both in the heavier wash fabrics, such as chambray and gingham, as well as in the thinner muslins and lawns.

The quantity of material required for making this apron in an eight-year size is two and three fourths yards of twenty-seven-inch material, or two and one fourth yards of thirty-six-inch material. The pattern may be obtained for ten cents by writing to the Pattern Department, FARM AND FIRESIDE, 11 East 24th Street, New York City.

The little sailor suit, also shown on this page, may be ordered from the same department. It is a practical little dress for vacation wear, and can be made up in serge and light-weight flannel or in any of the linens which come this summer in so many very attractive shades. Use a contrasting color for collar, shield and belt.

The Success of the Gored Skirt

IT is strikingly apparent that the gored skirt has made successful entry into suit lines this summer.

The most popular skirt in New York at the present time is the circular gored skirt which buttons up the front panel. This skirt is proving especially popular in wash fabrics, the front gore opening all the way down with buttons and buttonholes, thus making it easy to launder. This feature is naturally a strong recommendation.

The Waist in Coat Form

A VERY new idea this year in both cotton gowns, such as the new French piqué, and in velvets, silks and sheer fabrics is the introduction of a coat effect in the waist. Sometimes this coat is sleeveless, and



No. 1077—Princess Apron
Sizes 6, 8 and 10 years.

Practical Mid-Summer Fashions

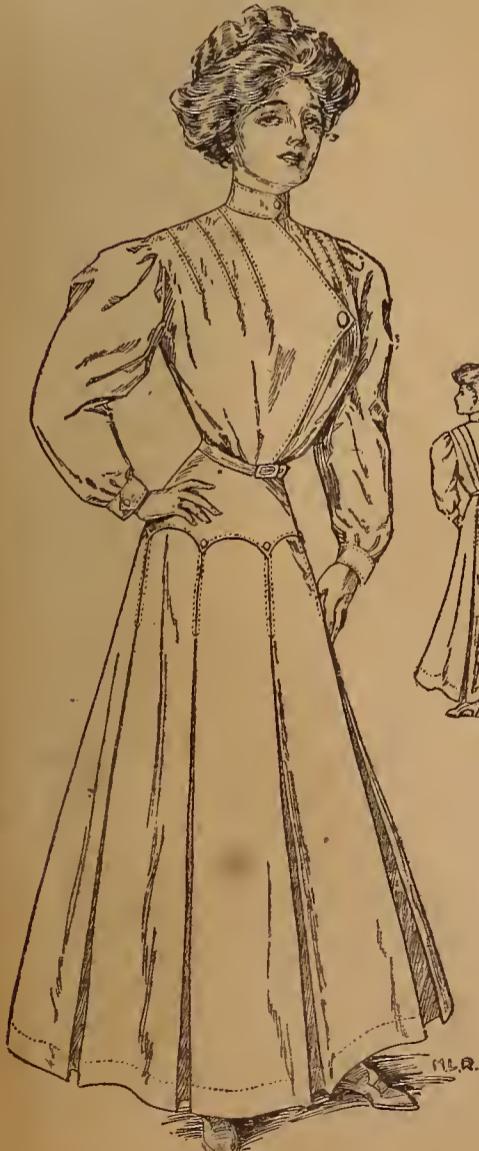


No. 1157—Child's Sunbonnet
Cut in one size only—medium.



No. 879—Tucked Waist With Pointed Yoke
Sizes 32, 34, 36 and 38 inch bust measures.

No. 880—Five-Gored Skirt With Tucks
Sizes 22, 24, 26 and 28 inch waist measures.



No. 1084—Tucked Shirt Waist—Double-Breasted Effect
Sizes 34, 36, 38 and 40 inch bust measures.

No. 1085—Plaited Skirt With or Without Yoke
Sizes 24, 26, 28 and 30 inch waist measures.

SUMMER CATALOGUE OF MADISON SQUARE PATTERNS

Our new summer catalogue cannot help but be invaluable to the woman who makes her own clothes. We will send it to your address for four cents in stamps. Order patterns and catalogue from the Pattern Department, FARM AND FIRESIDE, 11 East 24th Street, New York City.

Full descriptions and directions are sent with the pattern as to the number of yards of material required, the number and the names of the different pieces in the pattern, how to cut and fit and put the garment together, and also a picture of the garment as a model to go by.

THE PRICE OF EACH PATTERN IS 10 CENTS

When ordering be sure to comply with the following directions: For ladies' waists, give bust measure in inches; for skirt pattern, give waist measure in inches; for misses and children, give age. To get bust and breast measures, put a tape measure all the way around the body, over the dress, close under the arms. Order patterns by their numbers. Satisfaction guaranteed or money refunded.

OUR LATEST LIBERAL OFFER

We will give any two of these patterns for sending two yearly subscriptions to FARM AND FIRESIDE at the regular price of 25 cents each. Your own subscription may be one of the two. When ordering, write your name and address distinctly. We will send FARM AND FIRESIDE one year, new or renewal, and any one pattern for only 30 cents.



No. 1146—One-Piece Dress With Slashed Sleeves (Including Guimpe With Long and Short Sleeves)
Sizes 6, 8, 10 and 12 years.

No. 1147—One-Piece Dress With Guimpe
Sizes 4, 6 and 8 years.



No. 1158—Ladies' Sunbonnet
Cut in one size only—medium.



No. 768—Tucked Tennis Shirt Waist
Sizes 32, 34, 36 and 38 inch bust measures.

No. 769—Five-Gored Tennis Skirt
Sizes 22, 24, 26 and 28 inch waist measures.



No. 1144—Waist With Pointed Bertha
Sizes 32, 34, 36 and 38 inch bust measures.

No. 1145—Skirt With Simulated Tunic
Sizes 22, 24, 26 and 28 inch waist measures.



No. 1033—Vest Waist With Yoke
Sizes 34, 36, 38 and 40 inch bust measures.

No. 1034—Skirt With Plaited Side Flounce
Sizes 24, 26, 28 and 30 inch waist measures.



Our Young Folks' Department



Fluffy

BY HARRY WHITTIER FREES

UPPER was over, and Mabel sat in a corner of the nursery putting her dolls to bed. She was an attentive little mother, and very careful that each one of her babies was tucked in snugly for the night.

Near by on a big soft cushion sat Billy, the family cat. He was quite a handsome fellow with his soft, glossy coat and great, long whiskers. Just at present he was watching his little mistress with big, intelligent eyes, and all the time the tip of his tail was slowly moving to and fro in a most mysterious manner. This was Billy's way of talking, but just what he was saying one could never quite tell.

All day long Mabel had been very much excited. A few days before her father had asked her what she would like to have on her birthday. She had thought carefully for a moment, and then exclaimed eagerly, "A kitty!"

"A kitty!" repeated her father in surprise. "Surely you don't want another cat! I should think Billy would be nice enough for any little girl."

"Billy's nice as—as sugar," Mabel readily agreed, "and I just love him, but this little kitty won't be at all like Billy. It has long fur, just like my muff, and the dearest little face you ever saw. I saw a picture of it in my story book, and it's called a—a—"

"Perhaps you mean an Angora," suggested her father.

"That's it!" exclaimed Mabel delightedly. "And I'd rather have it than anything else."

"Are you quite sure?" he persisted. "How about a big dolly with curly hair and a lace dress, and one that opens and shuts its eyes, and even says mama and papa just like a real baby? And then there's a Teddy Bear. I know a lot of little girls who would prize a Teddy Bear above everything else."

But Mabel shook her head decidedly. A talking doll and a Teddy Bear were all very nice, but what could compare with a cute little kitty—one that snuggled down in your lap and was really and truly alive?

So the matter was settled by her father promising to get her one. As this was the day that it was expected to arrive, it was little wonder that she was restless and excited.

From early morning she had run eagerly to the top of the front stairs every time the door bell rang, but always to be disappointed.

The last little baby doll had been tucked warm and snug in its cradle, when Mabel looked up at Billy with a pathetic little droop to the corners of her mouth.

"I don't believe he's coming," she confided in a trembly tone of voice.

"Me-ow!" answered Billy softly, which might have been an expression of sympathy or one of gladness. Billy was not quite sure yet whether he wanted to share the affections of his little mistress with a stranger.

"Maybe the train ran off the track," continued Mabel in a horrified whisper, "and my poor, dear kitty—"

But just at that moment the bell jingled merrily down the hallway. Mabel was on her feet in an instant, and followed by Billy, she fairly flew to the head of the stairs.

She sat on the top step with her arm around Billy's neck, waiting expectantly until some one would answer the call. When Norah opened the door a moment later, there stood an expressman with a box in his arms.

"He's come!" shouted Mabel joyfully, and nearly fell down the steps in her eagerness to reach the door. The hallway, however, was much too dark to permit of her catching a glimpse of the fluffy little ball crouching timidly in a corner of the box. Not until the slats were removed in the kitchen did her birthday gift become a reality.

And a happier little girl it would have been hard to find. At first the little thing was strangely shy and hid his head under Mabel's arm, but after a time he became less afraid and looked carefully around the room until he espied Billy.

Jumping down from her lap, he walked slowly over to where the big cat was sitting. Daintily he extended a little pink nose as a token of friendship.

But Billy eyed him suspiciously and was not to be won over so easily. All the kittens he had ever seen looked entirely different from this one. So he reached out his paw and gave the stranger a smart tap on the head.

"Oh, Billy," cried Mabel reproachfully, as she caught the kitten up in her arms and gave him a sympathetic little hug. "How could you be so naughty!"

But Billy did not appear the least bit

sorry. He looked for all the world as though he would have liked to hit again.

Before Mabel went to bed that night she decided to name her kitten Fluffy. He was as soft and downy as a little chick, and the name just suited.

Scarcely a week had gone by before Fluffy had captured the entire household with his cute and winning ways. Even Mabel's father, who did not care for cats at all, soon displayed his fondness for the new arrival. In the evening, when he seated himself by the library lamp to read the evening paper, Fluffy never failed to climb up on his knee and curl himself up for a nap. Somehow or other it seemed to Mabel that her father would have been very much disappointed if Fluffy had failed to take his accustomed place.

For a time Billy regarded Fluffy in the light of an intruder. Despite all the efforts of the little kitten to win his friendship, Billy remained scornful. He would lie on the rug and watch Fluffy flitting about the room, playing with a spool, or darting madly about in a circle trying to catch his tiny plume of a tail, but never once did he show a desire to join in the play. If Fluffy approached too close he would give a protesting little growl, and the kitten would scamper to the other side of the room and sit gravely in a corner, with a look of startled wonder in his eyes.

In spite of all this discouragement, Fluffy never despaired of winning Billy's favor. One day he found a dead mouse under the lilac bush in a corner of the

yard. Perhaps it was the very one that Billy had caught the day before and thrown away. Taking it carefully in his mouth, he carried it into the house and placed it under Billy's nose.

"See what I've brought you," he said in the pussy-eat language. "And I'll hunt you another one if you'll only like me," he pleaded.

Billy looked gravely at the mouse for a moment and then he put out his paw and gave it a toss with his claws. And to Fluffy's great delight, it fell right at his feet. He caught it up and flung it back, and then followed quickly such a glorious game of toss as only two cats can thoroughly enjoy. That evening, for the first time, Billy permitted Fluffy to eat out of his saucer of milk. And after they were through, he even washed his little friend's face.

And never did a kitten have a better protector. Billy evidently thought it was his duty to guard Fluffy from the dangers that had beset him in his own kittenhood days. One day Fluffy in his rambles about the yard slipped jauntily through the iron bars of the front fence. It was the first time that he had been in the street, and it seemed a wonderful place to him. The passing teams, with their rumbling noise, greatly bewildered him, however, and before he knew it he had dashed madly across the street and crouched behind a tree. A fierce-looking bulldog had espied the crouching ball of fur, and quick as a flash he made for his prey. A streak of white and black from the opposite side of the street met him before the cruel fangs could accomplish their purpose. The bulldog stopped short in his tracks and vainly sought to dislodge the terrible weight upon his back, but the fierce claws only sank the deeper. Finally, with a whimper of pain, the now thoroughly frightened dog dashed madly away

write me the most interesting stories you can about some jolly day that you have spent. Of course it is going to be hard for you to decide which of a great many happy days was the happiest, but if you take your pad and pencil out to your favorite nook, and think for a little while, I am sure that you will discover some one day that was jollier than the others. It is this one day that I want you to write about.

For prizes in this contest we have some

very good story books that I am sure

you will enjoy. One of the reasons why

I want to know your ages is that I may

be fairly sure of choosing the right kind

of a book for you.

Affectionately,

COUSIN SALLY.

Prize-Story Contest

FOR the six best stories written by the boys and girls of FARM AND FIRESIDE on the subject "My Happiest Day" we will give prizes of interesting story books.

This contest is for boys and girls under seventeen years of age. All stories should be not more than three hundred words in length, written on one side of the page, and signed with the writer's name and age. They must be sent to Cousin Sally, care of FARM AND FIRESIDE, Springfield, Ohio, not later than July 20th.

Answers to Puzzle of Hidden Cities

1. St. Paul.
2. Austin.
3. Carson City.
4. Boise.
5. Topeka.
6. Madison.
7. Providence.
8. Augusta.
9. Dover.
10. Charleston.
11. Baton Rouge.

The prize winners were Laura Hutchings, Durham, North Carolina, and Carl Bishop, Riner, Virginia.

The Letter Box

DEAR COUSIN SALLY:—I will now write you a letter. I read your letter in the FARM AND FIRESIDE, and I am very glad we are going to have a new cousin. I am a girl eleven years old, with light-brown hair and brown eyes.

You asked us in your letter to tell about our gardens, so I am going to tell about my sister's and mine. We have peas, lettuce, beans, and watermelons planted in it. I live in eastern Montana, on a ranch of one hundred and sixty acres, a hundred miles from a town or railroad. My papa raises cattle and horses. I myself have two horses and love to ride horseback. I go to school, and I am in the fifth grade. I am trying to raise turkeys this summer, but I am not having very good luck, for they all die.

We had a big snow storm the twentieth of this month, and eighteen inches of snow fell. I like to read, and have read many books. From your cousin,

MARIE SCHWIND.

DEAR COUSIN SALLY:—I saw your letter in mama's FARM AND FIRESIDE, and will write you a letter and tell you something about myself. I am eight years old and I go to school. I like horses the best; I like dogs, too, and have chickens for pets. I have a garden, too, with corn, peas and carrots in it. I don't sell my garden stuff. Mama uses all of it. I earn fifty cents a month taking milk to a neighbor.

I like it here in California, and all the nice fruit we have to eat. There are many strange things here. I saw a horny toad the other day. We have gophers here, too, and all kinds of birds. It seems funny to me out here to see no snow. I was born in Michigan. We have been here four years.

Affectionately yours,
ERNEST MAHONEY.

DEAR COUSIN SALLY:—I am a little girl nine years old, and I live on a farm with my papa and mama and little brother, who is six years old. We have a very good time on the farm with the cows, calves, colts and kittens. We have four little kittens. I have a black one, and I call him Negro. My brother has two maltese kittens and they are very cute. I have ten little ducks, and my brother and I have twenty-four little chickens. We each have a flower bed; the flowers are up. We have a little dog, and we call her Minnie. She catches rats and mice. From your little cousin,

CLARA B. HILL.

DEAR COUSIN SALLY:—I live eight miles from town. I go to school. I am eleven years old and am in the fifth grade. I go to Sunday school, and like it very much. I have one sister and two brothers. I like the FARM AND FIRESIDE very much. My father has taken it for three or four years.

We have four little kittens and two dogs; one dog is just a pup and the other is twelve years old.

Your cousin,
VALETTA SHORT.

DEAR COUSIN SALLY:—I meant to answer your first letter in FARM AND FIRESIDE, but just neglected it, so I will try to put two letters in one. I will first tell you about my flowers. I got some poppy seed and planted them, but the water drowned them all out. Then my aunt gave me some dahlias, and they are nice yet. Papa gave me a pet pig.

Our school closed in April. I will stay at home and help with the work this summer. I was twelve years old the fourth of last month.

Your cousin,
MARY K. PATRICK.

DEAR COUSIN SALLY:—I live on a farm, and my papa has a blacksmith shop at a little country town called Tarsney. I am twelve years old and made nearly all the garden and planted two patches of potatoes this spring, and have tended all the garden. It looks fine. We also planted some flowers.

I help my papa in the shop. One day when we came home to dinner my mama told us to look in the sitting room. I looked all around and found a little rabbit under the dresser. It had come in at the kitchen door.

I help my mama take care of the chickens. We have one hundred and twenty-five Buff Rocks, and they are fine. I have three brothers and one baby sister. We have one horse, and a little dog for a pet. We call it Beauty.

I hope I will see my letter in print. We all think the FARM AND FIRESIDE such a good paper.

FLOYD BURGESS.



"Fluffy was always the first to awake"

Drainage Essential

The Far-Reaching Effect of Bad Drainage on Highways and Farms

A T A public "good roads" meeting, held in our town hall, the representative of the state department of public works made some timely remarks on the question how to construct and maintain good roads. It almost goes without saying that he highly recommended the early and free use of the "King" drag, but as the first essential he named thorough drainage.

When we go on a tour of inspecting our highways, and see water standing here and there along the sides of the road, and no outlet provided for it, we can see at once the reason why the road itself remains soft, sticky and often bottomless for so long a time in spring. If the water cannot run off, it will have to evaporate before the road can dry up and become passable.

Highway and street commissioners in country towns and villages quite commonly wait for the opening of spring and drying weather to give us good roads, instead of taking a hand in the game themselves, and coming to the aid of Nature and the season by opening up the ditches and providing outlets for the stagnant pools of water along the sides of the road.

While we take notice of the mote in our brother's (the highway commissioner's) eye, we should not neglect attending to the beam in our own eye. We do not have to go into the highways to find instances of urgent need of drainage. We can see them right on our own premises. For example, a few days ago I saw several of my choice Silver-Spangled Hamburg pullets humped up and apparently ailing. On examination, they appeared to have a touch of what some might call "cholera." They do not eat, do not care to move about, and their droppings are thin and of a metallic-green color.

I have had this trouble with fowls before, especially at a time when I kept ducks on the place and let them run with the hens. The ducks are filthy, and they frequent and keep stirred up every stag-

nant pool on the place. The hens drink out of these pools, and they are taken sick, and if not attended to in time and removed from the source of danger they soon die.

I surmised at once that there were pools of standing water around, and that some of the pullets took their drink from them rather than from the fresh and pure water provided for them. A little work with hoe and spade, and in some cases with the plow, soon provided the needed outlets for the standing water found in various places not far from the barn. In one instance I found tiles blocked up with mud. After I took up a few and cleaned them, the drain took the standing water off quick enough.

Sometimes all sorts of poisonous stuffs have accumulated on the premises during the winter, and when decay of organic matter sets in with the approach of the warm season, standing water becomes quite dangerous to animals drinking from it. If the season continues wet, and I cannot entirely get rid of stagnant water in low places near barns, poultry houses, etc., I usually pour some kerosene into such pools, so as to prevent the fowls from drinking there. At any rate, we can well afford to make determined efforts to get rid of surplus water, especially if apt to be unhealthful or dangerous to fowls or other domestic animals.

Surplus water and soggy soil are not conducive to the health of plants, trees, shrubs, etc., either. In many cases we find large areas in orchards, fields and gardens covered with water at this time when slight efforts in the use of plow, spade and hoe would give immediate relief, and make the land earlier and more productive, and farming operations generally more satisfactory. Drainage is indeed one of the very first essential conditions of success, both in good-road making and in farming, poultry keeping included.

T. GREINER.

Making a Well in Sandy Ground

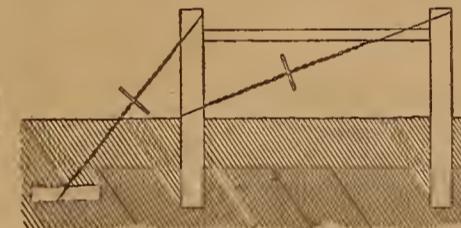
THE illustration gives some idea of a way of making a well in very sandy or loamy ground. I have tried the plan, and find it practical.

Dig the well to the necessary depth for water, fill in with creek gravel or pounded sandstone in the bottom, then put in the tiling, filling about them with gravel until the top of the water course from which you wish to derive your supply is reached. There put in a concrete diaphragm of

Anchor and Brace for Post

THE illustration shows the best plan I have ever used for bracing and anchoring the end post in building wire fence.

The end post is anchored to a stone or block placed three feet in the ground,



and the block and post are connected by four strands of No. 9 wire twisted together.

The brace between the end post and the brace post is a four-by-four about ten feet long, and the cable connecting the two posts is made of four strands of No. 9 wire twisted together.

NOAH FARLEY.

Grasses as Soil Builders

GRASSES are the agents employed by Nature to cover bare spots, to protect the lands from the washing of torrential rains, and from the baking, burning and sterilizing action of the sun, and finally to make the soil fertile. Wherever the natural conditions are sufficiently favorable to admit of the growth of any green plant, the surface soil is first covered and protected by grasses. They are the agents that serve to build up fertile beds of loam. They gradually form turf, and the rotting turf makes humus, which is, from an agricultural standpoint, the most important and most valuable constituent of the soil.

The presence of humus in a soil is a necessity. The richest soils, those that can sustain continued cropping the longest without the addition of artificial manures, are always those that are rich in humus.

Soils containing a high percentage of humus will absorb or soak up more water and will hold it longer than soils deficient in organic matter. It changes the physical condition and gives that fineness and tilth so characteristic of rich soils. It makes the soil less susceptible to abrupt changes of temperature, absorbing and radiating heat more slowly. Humus takes up nitrogen, phosphoric acid, potash, lime and other organic plant foods, thus retarding the loss by leaching. Turf is indirectly a valuable reservoir of nitrogen, and to cover a field with turf-forming grasses is one of the best ways of increasing the amount of humus in the soil.

R. B. RUSHING.

four to six inches. Above this cement all joints of the tiles and fill about them with clay or earth.

This will give a well free from surface water, worms, toads, etc., and the gravel below forms a filter to keep the sand from bothering. F. VICTOR BRAYMER.



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FARM AND FIRESIDE, Springfield, Ohio

LAST CALL To Pony Contestants

The Pony Contest which **FARM AND FIRESIDE** is now conducting will end July 30th. Orders bearing a July 30th postmark will count, but none later. Be sure that all your subscriptions are sent by July 30th at the latest.

No contestants will be admitted to the contest from now on, but there is still plenty of time for those who are already taking part to make their positions in the contest all the better. No one will be sure of a pony or a piano until the very last minute of the contest.

In our former pony contests more subscriptions have been sent in the last three weeks than during six weeks at any other time while the contest lasted. Many pony winners have gotten ahead during the last few weeks alone. You can do the same now. Don't give up, but make every minute count from now on. That is the way to win!

THE PONY MAN
Farm and Fireside
Springfield, Ohio



Sunday Reading



Common Days

ONE of the chief dangers of life is trusting occasions. We think that conspicuous events, striking experiences, exalted moments, have most to do with our character and capacity. We are wrong. Common days, monotonous hours, wearisome paths, plain old tools and every-day clothes tell the real story. Good habits are not made on birthdays, nor Christian character at the new year. The vision may dawn, the dream may waken, the heart may leap with a new inspiration on some mountain top, but the test, the triumph, is at the foot of the mountain, on the level plain.

The workshop of character is every-day life. The uneventful and commonplace hour is where the battle is won or lost. Thank God for a new truth, a beautiful idea, a glowing experience; but remember that unless we bring it down to the ground and teach it to walk with feet, work with hands and stand the strain of daily life, we have worse than lost it—we have been hurt by it. A new light in our heart makes an occasion; but an occasion is an opportunity, not for building a tabernacle and feeling thankful and looking back to a blessed memory, but for shedding the new light on the old path and doing old duties with new inspiration. The uncommon life is the child of the common day, lived in an uncommon way.

—Maltbie D. Babcock.

Three Resolutions

LET us all resolve: first, to attain the grace of Silence; second, to deem all Faultfinding, that does no good, a Sin, and to resolve, when we are happy ourselves, not to poison the atmosphere for our neighbors by calling on them to remark every painful and disagreeable feature of their daily life; third, to practise the grace and virtue of Praise.—Harriet Beecher Stowe.

Hard Work

THE epigram of Mr. Thomas A. Edison, that "Genius is partly inspiration, but mostly perspiration," is worth attention. It scarcely needs elucidation, it is so luminous. And yet as preachers are fond of amplifying good texts into poor sermons, so do we find it difficult not to say a halting word about this definition. Genius is indeed God-given, but nobody knows what may be accomplished by hard work. Oftentimes it takes work to bring out genius. The man who wants anything must put his hand hard on the plow. Be assured that even if he does not get what he wants, he will get something worth having. No work in this world is ever unrewarded. Hard work accomplishes wonders, whether the end be good or evil. People whose ends are evil are usually not afraid to sweat in attaining them. The good must also be up and doing. Be like Mr. Edison; see that your work is going to benefit somebody.

Stand for Something

THE greatest thing that can be said of a man, no matter how much he has achieved, is that he has kept his record clean.

Why is it that, in spite of the ravages of time, the reputation of Lincoln grows larger and his character means more to the world every year? It is because he kept his record clean, and never prostituted his ability nor gambled with his reputation.

Where, in all history, is there an example of a man who was merely rich, no matter how great his wealth, who exerted such a power for good, who has been such a living force in civilization, as this poor backwoods boy? What a powerful illustration of the fact that character is the greatest force in the world!

A man assumes importance and becomes a power in the world just as soon as it is found that he stands for something; that he is not for sale; that he will not lease his manhood for salary, or for any amount of money, or for any influence or position; that he will not lend his name to anything which he cannot indorse.

The trouble with so many men to-day is that they do not stand for anything outside their vocation. They may be well educated, well up in their specialties, may have a lot of expert knowledge, but they cannot be depended upon. There is some flaw in them which takes the edge off their virtue. They may be fairly honest, but you cannot bank on them.

It is not difficult to find a lawyer or a physician who knows a good deal, who is eminent in his profession; but it is

not so easy to find one who is a man before he is a lawyer or a physician, whose name is a synonym for all that is clean, reliable, solid, substantial. It is not difficult to find a good preacher; but it is not so easy to find a real man, sterling manhood, back of the sermon. It is easy to find successful merchants, but not so easy to find men who put character above merchandise. What the world wants is men who have principle underlying their expertise, principle under their law, their medicine, their business; men who stand for something outside of their offices and stores; who stand for something in their community, whose very presence carries weight.—Orison Swett Marden in Success Magazine.

A Day at a Time

A day at a time—of gladness or pain; A day at a time—of loss or of gain; A day at a time—not a month or a year; A day at a time is all we have here. A day at a time—of storm or of sun; A day at a time—just one, only one! A day—shall we fill it with smiles or with tears?

A day—shall we hedge it with courage or fears?

Oh, who is the weakling can bear not one day, Though pleasure and cheer may not journey his way?

If he gaze not behind, if he glance not ahead, The half of his trouble will surely be dead.

A day at a time—no further we go, Be our feet shod with joy or weighted with woe:

To-morrow?—we never can make it our own; To-day is given us—that alone.

Yet we strive to fill up the future with care.

A score of to-morrows we labor to bear; Let us do to-day's duty, and when that is done, Leave the rest to the All-wise, All-loving One!

A day at a time, with a song and a smile, Let us fare cheerfully, mile by mile, From the matin song to the evening chime—

A day at a time! a day at a time!

—Emma C. Dowd.

Strike a Balance

IN our small journey through life we run into many dangers and temptations, and it behooves everybody who wants to make the journey successfully and with the greatest happiness to look well to the conduct of his affairs. The difficulty with most of us is to learn to live sensibly and sanely. We are in great danger of going to extremes. The thing is to strike an effective middle course. We want to do great deeds; to accumulate money; to reform somebody or something. Now, it is certainly wrong not to be awake to our privileges and opportunities for work, and not to get joy out of doing something that will make the world happier. But there is a time to loaf and be glad, also. There is virtue in being a happy citizen, as well as an active one. Life is serious, but not so serious that we need go about with a sour countenance and a book of rules. The wise man is the one who hits a nice balance in his affairs, who is neither wearisomely strenuous nor a flaccid shirk.

A Good Kind of Prayer

A TWELVE-YEAR-OLD girl, who was one of the "little mothers" in a New York slum, had quite worn her life away in caring for the naughty and the sick children younger than herself, and she lay dying. To a girl of her own age, who sat by the bed and tried to comfort her, she said, "I don't know how to pray. I never had a mother to teach me. I never joined the church. I haven't been to Sunday school in three years." Then she sank back in despair, and her thin, calloused, needle-pricked hands lay helpless on the threadbare quilt. The other girl looked at them thoughtfully, and then said, "Show Him your hands, dear, and He will understand."

Josh Billings the Practical

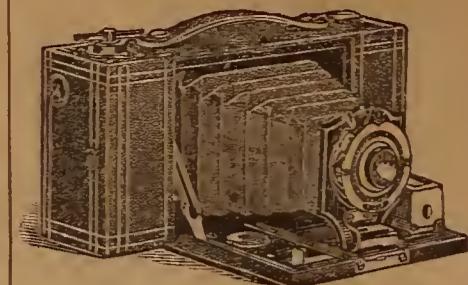
"WORK," he said, "is what you don't want to do. If you want to do it, it's play. Just learn how to make play of your work, and the neighbors won't be so glad to get away from you."

He also said: "Duty is the good action that bores you. When you are doing your duty your face looks like a tombstone. When you learn how to make pleasures of your good deeds your face will be as welcome as a strawberry patch in the tall meadow grass."



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FARM AND FIRESIDE

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Springfield, Ohio, July 25, 1908

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Improvement of Farm Homes

ON THE top floor of one of Chicago's skyscrapers is the office of a young man who has been, and is now, engaged in an interesting work along the line of beautifying farm homes. He is a graduate of the Michigan Agricultural College, and there he got the training that goes with his natural talent.

It is interesting to state that there is a deal of call for his services, for this shows that the soil tillers are paying more attention to the farm home and farm buildings than they did ten or fifteen years ago. A great deal of attention is being paid to the matter of laying out the grounds after modern landscape art, and in planting and cultivating the most desirable kinds of trees and shrubbery for the farm-home lot.

It used to be that there were a few straight lanes and some narrow walks marked out in straight lines from place to place. Now the trees, shrubbery and the drives to and from the place that has been set back from the highway form a bit of parking that greatly adds to the beauty of a typical rural home.

The work of this landscape man who graduated from a farm college takes him to practically all of the states of the Middle West. Quite recently he journeyed to Nebraska to look over a farm-home grounds that were to be improved, and it is not unusual for him to spend two weeks at a time looking over Illinois, Indiana and Wisconsin farms to make plans for improving the home grounds.

J. L. GRAFF.

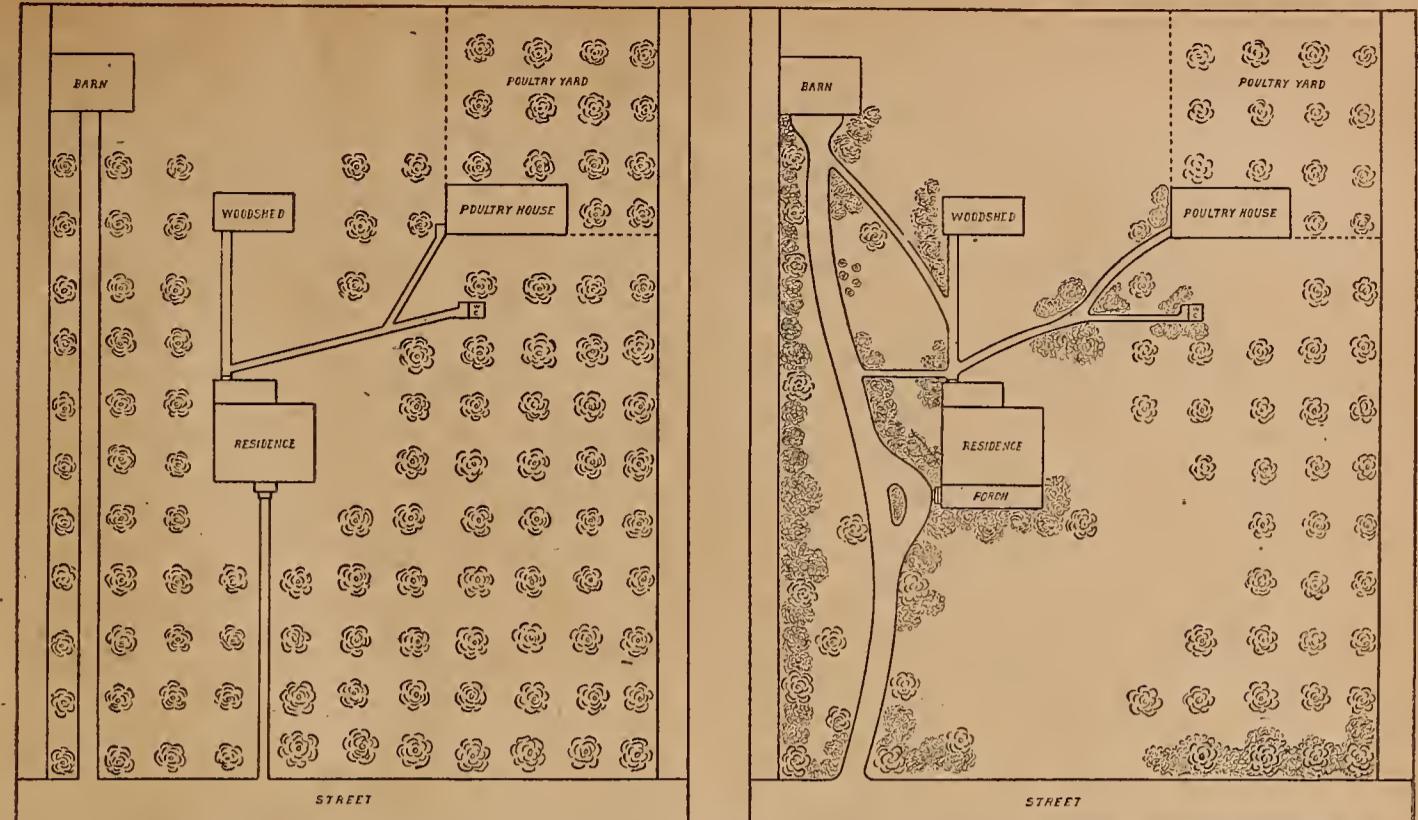
Vacation Time

JUST about this time of the year is a good time for the farmer and his wife to take a little vacation. Not all farmers can leave home for two or three weeks, but more than half of them can. Not all can afford the expense of a vacation of three to six weeks, but many can. Almost all can afford to go away for a week some time between now and October. At this time one can secure cheap excursion rates to many places of interest, and it should be the aim of every farmer who owns his farm, or has the debt on it under his thumb, to take a little vacation every year. The city man leaves the city to get a good breath of pure country air, and to bask in the sunshine and get a little tan on his features. The farmer has these the year round. Then why does he need a vacation? He needs it to rest his mind and body, and to brighten him up and to show him how well off he is in the world.

He needs it not only to show him how well off he is, but also to teach him that he is not quite the "whole cheese." Some farmers who are quite successful in managing a farm and making money get the idea that they are "IT," and they need a little ramble in the world to take the conceit out of them somewhat. But the main object of a vacation should be rest and change. The change is the greatest rest. One leaves the farm and all its cares behind and lives in a new world and among new people, and his thoughts naturally run in new channels and his brain is rested, so much so that when he goes back to the farm he feels almost like another person, and he sees things in a totally different light, and he immediately sets about making a lot of little changes and improvements he never would have thought of if he had not been away some time.

About Choosing the Place

The first question that comes into the mind of one who decides to take a vacation is, "Where shall I go to get best value for the money?" First, there is the old home, or relatives, or old chums back East, or sons, daughters or other relatives out West. If one is at all socially inclined you can have a real good old time visiting them, and maybe do them lots of good by showing them some of the new ways of doing things you have learned. And you may learn a whole lot yourself. Anyway, you can have a good time comparing notes and experiences and talking about old times. But right here let me say that "old times" were no better in any respect than the present times, and maybe not nearly so good, if we aim to make the present times pleasant. We cannot live the old times over again except in memory, but we can live the present times in fact, and make them ninety per cent better than the old times. To be sure, an old fellow's limbs have lost much of their spring, and he can't stand on his head quite so well as he used to in his youthful days, and he can't very well have the same sort of fun, but it takes less fun to do him. He can enjoy enough, though, to make life pleasant to both himself and those about him. If you visit relatives or chums, try to make the visit as pleasant as possible to both them and yourself. Many old farmers are like many old soldiers—they want to be everlastingly telling



Woodcrest Farm Before and After Improvement. Cutting Out a Few Trees and Grouping a Bit of Shrubbery Here and There Adds to the Beauty of the Farm Home

of their exploits. They have farm on the brain, and while a short, snappy dose of it occasionally is mighty interesting, monolog is wearisome. When you are out for an outing, drop the old shop. Leave the old farm behind and let it rest. As an old chap said to me many years ago, "You can't take the old farm with you when you die, so it is a good idea to break away from it once in a while, for you will finally have to break away from it altogether."

It is a good idea to get the best out of life as we go along, for we pass this way but once. Make your visits short and sweet, and do all you can to make your host and hostess forget their cares. One always has the most fun in making fun for others. I know a judge of a city court who visits his brother's farm once a year to, as he says, "rest and yell!" To see him there and hear him talk one would think he would make a better clown than judge. But when he is on the bench he is another person. He is said to be one of the best police judges in the United States, and ugly criminals fear him, while those who are unfortunate do not hesitate a moment to tell him the truth, knowing they will get fair treatment. On the farm he turns himself loose and gets relief and rest and pleasure acting like a boy.

Concerning the Cost

If one decides to spend his outing in seeing some great natural wonder, he will find that he can, by being careful, make a little money do a great deal for him. Rates by rail and steamer are low and he can go a long distance for a small sum. Then, one does not need to patronize five-dollar-a-day hotels. Of course it is a good plan to get the finest if one has the money to spare, but if he wants to make a little go a long way he would better patronize private houses. Two years ago a little fourteen-year-old chap came to me and said he would like to see Niagara Falls, and he wanted to know

how much he would have to earn to make the trip. I told him to dig in for fifteen dollars, and say nothing to any one about it. That was in March. About the middle of June he came to me with a small salt bag, and said, "See here. I've got it!" He poured out a lot of small change, with a few dollars mixed in. We counted it, and found he had fifteen dollars and ten cents. "I made that working for everybody," said he with a business-like air. "Is it enough?" I told him that would pay his fare and give him a week at the Falls if he was careful. "If pa knew I had this," said he, glancing about, "I would not have it two minutes!" When the annual excursions were run in August he made the trip. On his return I asked him how much it cost him. "Nine dollars for the ticket; three dollars for a cot six nights; two dollars and ten cents for food, and sixty cents for rides," said he. I asked him how he managed to live so cheaply, and he said he bought bread at the bakery for five cents a loaf, and one loaf with five cents' worth of cheese or cooked ham or bologna made him two meals, and twice he bought a few "extras." He said the trip was worth double the cost. I notice that it helped him very much, for not long ago he quietly informed me that he had a little over thirty dollars in the bank, and that he would make it fifty before the year is out. It taught him how to save.

Not long ago I was talking about little vacation trips to a farmer who has lived

in this locality thirty years without ever going twenty miles from home. "They are all well enough for people who are rich," said he, "but for such as me they are out of the question. I reckon a person could see several things on such trips, but it takes money!" I told him about the boy above mentioned, and he declared that he would tan the hide of any boy of his who would throw away his money that way. There are a whole lot of people just like him. They need a little trip out occasionally to broaden their minds and open their eyes to the beauties of the world in which they live.

If you can take a little vacation, do so with a determination to get the most out of it. Don't chase a mob, don't "follow the crowd," don't go hither and thither with a rush, don't try to crowd a week into a day. Take things easy, quietly. Sleep late in the mornings, and move about as though you had nothing in the world to do. You will see people rushing to and fro, as though their lives depended on getting here or there. Some people love the strenuous scramble. They want to get on a train almost before it stops, or off a steamer before it touches land. They are constantly packing and unpacking grips and trunks and yelling at somebody. They love to be seen reading the paper at the breakfast table, to make others think all their time is so full of business that they must be doing something every moment of it. They want to be served first everywhere. They crowd and push and jam to get at things, and run to get there first, and act generally exactly like hogs. Don't be like one of these. They may get something out of their vacation, but it is not what you want. You are out for rest and a pleasant time; they to "do" places. Let them "do." You take it easy and have a time pleasant to remember. FRED GRUNDY.

The Care of the Land

THE farmer who cares for his fields is wise. The neat appearance, the prevention of soil washing and the maintaining of fertility are all essential.

The fencing of the field has much to do with the neat appearance. A hedge fence allowed to grow twenty feet high about the field will give it a ragged appearance as well as sap the soil for fifteen feet from its line. Better run a fire through the hedge or cut it away to a normal size. A post-and-wire fence gives a field the neatest appearance. It makes no shade, takes no life from the land and is no trouble to keep. Weeds, briars and sprouts should never be allowed to grow along the fence. They give the field an unsightly appearance, will lengthen their border year after year and rob a man of much valuable land.

Then, too, if the farmer would care for his land properly he must see to it that the rich soil does not wash down to the river. He must cultivate the land with this point in view. Never plow rolling land up or down the hill. Plow around the hill, throwing the dirt up or down the incline. If there is a wash on the hillside, drive stakes across it at proper intervals, and throw straw, brush, rocks or old stumps above them. The sediment will collect and fill the ditch. Don't plow the ditch full of loose dirt that will be swept away by the first freshet. The ditch will only be made the wider and deeper.

To maintain soil fertility requires two things—namely, fertilizers and rotation of

crops. He who stops washes with all the manure that accumulates about his place is robbing the land of what properly belongs to it. The soil must have plant food or be without power to produce good crops. The manure spreader should be used extensively on the farm where the manure collects rapidly.

Clover is also a good fertilizer, besides being profitable as a feed. A piece of poor land can be built up wonderfully by clovering it a few years. Milk cows and hogs will grow fat on the clover field while the land is being fertilized.

It is better to purchase a commercial fertilizer than to farm the land year after year with scanty returns. The meaning of poor land is poor crops, and the commercial fertilizer will more than pay for itself. A friend last year raised twenty-five bushels of wheat to the acre by the use of bone meal on land that hitherto produced ten to twelve bushels to the acre. The fertilizer cost two dollars an acre; the profit was from eight to ten dollars to the acre.

Rotation of crops helps to maintain the soil. You can corn land to death. One crop soon exhausts the soil. Oats may follow corn, wheat may follow oats, clover may follow wheat, and corn may follow clover profitably.

W. D. NEALE.

A Farmer's Grievance

I HAVE a letter from a good farmer, who says he has read FARM AND FIRESIDE seventeen years, and expects to read it seventeen more if he lives that long. But he has a grievance. He says farmers could do much better in a financial way if they did not have to pay the steel, lumber and several other trusts such enormous profits on everything in those lines that they have to buy. He asserts that but for the high tariff protection these trusts have, prices on their products would not be so high by one third as now.

Probably he is not far wrong. There is no sense whatever in keeping the present high tariff on lumber, steel and several other things. There is some injustice in compelling the farmer to sell his surplus in wide-open markets and buy in protected markets. The tariff on some things, especially lumber and steel, should have been removed years ago. Now the production of these commodities is so largely in the control of the trusts that a removal of the tariff would not be apt to result in much lower prices. Still, the tariff on these and some other articles should be removed. Every voter should bear this in mind when he goes to the polls next fall. And he should especially remember that we need a parcels post, postal savings banks and some other conveniences nearly every other nation on earth is now enjoying, and he should put his vote where it will do some good.

A short time ago a dealers' association held a meeting, and among other matters the question of who to support for Congress came up. One of the leaders had secured the views of several candidates, and he made his report. Whereupon the entire membership pledged themselves to support with all the means at their command those men who favored the protection of these dealers. Some of these candidates belong to one party and some to another. Why should not the farmers learn a few things about the views of the different candidates, and support those who will favor farmers in the matter of tariff, parcels post and other legislation we need?

FRED GRUNDY.

Review of the Farm Press

What Others Are Saying About Important Farm Matters

Keep the Land Busy

A LOAFING man usually plans mischief, a loafing animal gets out of condition, and a loafing field supplies itself and all its neighbors with weed seeds. On the dairy farm we need almost unlimited quantities of feed and material for bedding. If we keep the land real busy during the entire growing season a surprisingly large quantity of stuff may be grown on a comparatively small piece of land.

In the beginning of May the winter rye and vetches are being cut and fed, and as soon as this crop is off the land, another one is started, usually corn. If the corn is wanted for soiling, a large-growing variety of sweet corn is preferable. A little later the wheat and vetches will come off, and there we also plant corn or we plant or sow cow peas and sorghum. Millet is also sown where but fifty or sixty days can be spared for the crop. These same crops are put in where the oats and peas come off. In this way we get two crops from all the land and put a third one in as a winter cover crop and for next spring's feed.

Not only does this make lots of feed for the cows, but also for the soil. The soil is constantly filled with a mass of decaying and growing roots. These decaying roots and stubbles in themselves bring about conditions that are very favorable to the liberation and preparation of plant food. That which was formerly insoluble and unavailable becomes soluble and available. The manure is saved and brought back, and that returns nearly all the plant food formerly contained, which added to that made available soon gives us a big working capital of actual fertility and very large crops.

A little lime to keep the land in good heart and a little commercial fertilizer to balance up the plant-food ration will make the soil show us crops that seem almost incredible to the man who skins around leisurely over his farm and says the land must have rest. This is not a theory, nor do I know the facts from hearsay, but by actual doing with my own hands. The inherent possibilities of our average soil are beyond our greatest expectations if we only treat it intelligently and properly.—L. W. Lighty in *The National Stockman and Farmer*.

The Model Wood Lot

THE model wood lot should contain the number of trees to the acre consistent with the most rapid development of the best timber. Trees should stand close enough together in youth to stimulate growth in height and produce long, clear trunks. Later more space for each tree will be needed. Stands under ten years of age may contain from one thousand to three thousand trees to the acre. This number should be gradually diminished as the trees develop, until at maturity probably two hundred of the original trees are left. Under natural conditions this thinning would be brought about through a struggle for supremacy, in which the weaklings are killed out by the stronger and harder trees. When artificial thinning are made, the energy usually wasted in this competition is employed in timber production, and the maturity of the crop is thereby hastened. And what is even more important, the composition of the stand and the quality of timber produced can be controlled by gradually removing the trees of inferior quality and kind.

There should be no large openings in the woods, for the crowns of the trees should be so close together that in summer little direct sunlight falls upon the ground. The soil should be loose, porous, rich in vegetable mold, and covered with leaves and litter to the exclusion of grass and light-demanding weeds. There should be an undergrowth of young trees to take the places of those that fail or are removed. The trees along the exposed margins of the wood lot should be covered with branches to the ground, so as to form a dense border to safeguard against damage by storms.

The amount of wood produced annually by a fully stocked, thrifty stand of timber in this region depends upon the quality of the soil and the species of trees. Rapid growers on good soil may produce as much as one hundred and seventy-five cubic feet to the acre each year, which is equivalent to almost two cords of four-foot wood. Medium soils fully stocked with the usual mixture of second-growth hardwoods will yield at most about one hundred and ten cubic feet, or one and one fourth cords to the acre. Of course,

the poorer the condition of the wood lot, the less the annual yield. It is doubtful if an acre of the average wood lot of this region produces more than one half cord of wood a year.

If the wood cut from the forest annually or at stated periods does not exceed the amount grown during the interval, and care is taken to keep the ground fully stocked with thrifty young trees, the wood lot may be kept up indefinitely. The endeavor should be to ascertain about how much wood the area is each year capable of producing, and to cut a little less than is grown, in order to be on the safe side. Thus, if an acre of wood lot is producing one cord of wood annually, it will be best to cut an amount not exceeding three fourths of a cord to the acre for each year. This represents the interest on the forest capital.—Forest Service, Circular No. 138.

Weaning Pigs in Colorado

PIGS should not be weaned until they are at least eight weeks old, and if the sow is not to have a second litter, or if there is time enough in case she is, it is better to let the pigs suckle until they are ten to twelve weeks old.

Farmers often get in a hurry and wean pigs when six weeks old, but unless there is an abundant supply of milk and especially good care is given, the pigs are likely to get stunted, sometimes so severely that they never recover.

The cheapest way to put gains on young pigs is through the sow. She has a strong digestion and can turn coarse grains and pasture into easily digested milk. Careful experiments show that a pound of weight taken from the sow will make more than one pound of gain on the pigs, the flesh of the young animals containing more water.

The sow should be fed to produce a high yield of milk, and the pigs should be kept with her until they get to eating a full feed of both grain and pasture.

When the time comes to wean the pigs, cut down the sow's ration to water and a little grain. Take away the stronger pigs first, leaving the weaker ones to suckle for a few days. This method will give the weak pigs an extra chance and will dry up the sow without injuring her udder.

When first weaned, feed the pigs from three to five times a day. While with their mother they took their meals at least every two hours, and too sudden a change is detrimental.

After they get to growing vigorously cut down to two meals a day, and when they weigh seventy-five pounds each and are on good pasture feed once a day and that at night.

When first weaned, feed the pigs some skim milk if possible. It makes the change from mother's milk easier. Whole milk is good, but as butter fat is worth four hundred dollars to seven hundred and forty dollars a ton, it is expensive pig feed. Tankage will take the place of milk, making it about one fifth the total weight of the grain fed.

A variety of feeds will give larger and cheaper gains than will any single feed. Peas, barley, wheat, rye, milo maize and corn are the grains to use in Colorado. Soak from twenty-four to forty-eight hours, each time feeding a mixture of at least two grains.

Do not sour the feed, and keep the troughs, pails and barrels used in feeding sweet and clean.

Half the weight of a two-hundred-pound pig should be made from pasture. Alfalfa makes the best pasture, followed by rape, clover and a mixture of wheat, oats and barley sown thickly.

Keep the pasture short for young pigs, as fresh growth is the most easily digested, and tall pastures when wet often make the pigs have sore skins. Have two pastures, and change from one to the other, so that the pigs will always have clean feed.

They need fresh, clean water always before them. If a well is not convenient, the water can be supplied cheaply in barrels to which are attached hog waterers.

They must have a warm, dry, clean shelter, free from draft, every night in the year, and they need a shade from the mid-day sun.

If the pigs are lousy when weaned, dip them twice ten days apart. Put up short posts in the feed lot and pastures. Wrap these posts with old sacks, and once a week saturate the sacks with crude oil or kerosene. The pigs will rub on these and the oil will kill the lice.—H. M. Cottrell in *Colorado Agricultural College News Notes*.

Tobacco for Sheep

THE efficiency of tobacco in eradicating the internal parasite, and thus contributing greatly to the general health of the animals that consume it, is attracting wide attention among sheep raisers. Effectual in treating all internal organisms, it has proven especially desirable in eradicating the deadly bowel nodule, which is a frequent source of trouble. These being destroyed, many of the ills usually attributed to other causes disappear.

It matters little what variety of tobacco is used for the purpose. It has been reported, however, that a certain variety has proven fatal to the animals which consumed it. As mentioned below, it is probable that this disastrous effect was from a matter of quantity, and not quality. Those wanting tobacco may procure either the whole leaf just as it comes from the grower, or the stems or ribs of the cured leaf after the intervening tissue has been removed for other purposes. The former is preferable, as it contains much less fiber than the stems alone, and it also possesses the desired medicinal qualities in a more concentrated form. The stems, however, if finely ground should be effectual.

It should be remembered that in all instances tobacco must be pulverized and given in connection with salt, as sheep would not otherwise take it. Begin with one fourth tobacco, by measure, and if necessary add more salt until the animals are induced to eat the mixture. Keep accessible at all times, giving no other salt. Sheep will practically refuse to eat it at first, but in time they will learn to like it. The writer, who lives in a tobacco section, has known instances in which sheep and even cattle have learned to devour tobacco ravenously, and if permitted to have it, eat it in such quantities as to prove fatal. If fed in connection with salt as above suggested no such injurious results need be feared.—H. E. Tweed in *The National Stockman and Farmer*.

The Self-Boiled Lime-Sulphur Mixture

AT INTERVALS during the past several years the writer has made experiments with sulphur and various sulphur compounds with the object of finding a fungicide that could be used during the growing period on fruit trees, especially the peach, without injury to the foliage or fruit. The first work was done in 1901, at the suggestion of Mr. M. B. Waite, and consisted of experiments with various sulphur compounds, all of which proved injurious to peach foliage. During the season of 1907 self-boiled lime-sulphur mixtures in various proportions and strengths were tested on both the apple and the peach.

Preparation of the Mixture

The mixture that gave the most promising results was composed of ten pounds of sulphur (flowers or flour) and fifteen pounds of fresh stone lime to fifty gallons of water, and may be prepared as follows:

Place the lime in a fifty-gallon barrel and pour a two or three gallon bucketful of boiling water over it. Immediately add the sulphur and another bucketful of hot water. The heat from the slaking lime will boil the mixture violently for several minutes. Some stirring is necessary, to prevent burning, and more water should be added if the mass gets too thick to stir, but the cooking is more effectual when the minimum quantity of water is used, usually from six to eight gallons being required. A piece of old carpet or gunnysack thrown over the top of the barrel helps to keep in the heat. The boiling will continue from twenty to thirty minutes, depending upon the quantity of the lime. When the boiling ceases, dilute with cold water to make fifty gallons, stir thoroughly and strain through a sieve of about twenty meshes to the inch, in order to take out coarse particles of lime, but all the sulphur should be carefully worked through.

In a similar manner, enough for one hundred and fifty gallons may be prepared in a barrel by using thirty pounds of sulphur and forty-five pounds of quicklime with about twenty gallons of boiling water. When the boiling ceases, the barrel should be filled with cold water and diluted with one hundred gallons more when transferred to the spray tank.

In some experiments, a wash consisting of five pounds of sulphur and ten pounds of lime to fifty gallons of water gave ex-

cellent results. This would indicate that a much more dilute mixture than the ten-fifteen-fifty formula may prove to be a satisfactory fungicide. The wash was also prepared with cold water instead of boiling water, and in some cases a portion of the lime was at first withheld, and later added, a small lump at a time, in order to prolong the boiling; but the experiments have not yet been sufficient to determine definitely the correct formula and the best method of preparation.

Should the boiling be very prolonged the mixture might become caustic enough to burn foliage, although no such injury developed in the experiments. If it should be found in practise that the use of hot water dissolves too much sulphur, so that the foliage is injured, cold water may be substituted and a less intense heat thus developed, or the sulphur can be withheld until the lime has partly slaked, thus regulating the amount of sulphur dissolved.

By this boiling process the sulphur is put in good mechanical condition for spraying, and enough of it is dissolved to make the mixture adhesive. As a large percentage of the sulphur is simply held in mechanical mixture with the lime water, it is necessary that the spraying outfit be provided with a good agitator, so that the mixture may be kept constantly stirred, and settling be thus avoided. In the treatment of apple trees, Paris green may be added for the control of the codling moth in the same manner as when Bordeaux mixture is used.—Bureau of Plant Industry, Circular No. 1.

The Depressing Influence of a Poor Cow

ONE poor cow in a dairy herd may decrease the production of the best cows one hundred pounds of butter fat per annum for each cow when averaging the results of the herd. This is clearly shown in the records obtained at two of our experiment stations (Kansas and Michigan) with herds composed of twenty or more common cows.

	Yield of Butter Pounds.	Yield of Fat in Pounds.
First Herd		
Best cow	9,116	383.7
Second best cow	6,966	334.5
Average	8,041	359.1
Poorest cow	2,463	87.2
Average of the three	6,182	268.5
Average of the herd	6,288	251.2
Second Herd		
Best cow	7,607	371.1
Second best cow	8,113	361.7
Average	7,860	366.4
Poorest cow	1,205	41.1
Average of the three	5,642	258.0
Average of the herd	6,259	255.6

In both instances the poor cow reduced the average yield of the two best cows to the average of the entire herd, a reduction of practically one hundred pounds of butter fat for each cow. These results show it is possible for a few poor cows in a herd to so reduce the profits realized from the good ones that it appears that the entire herd is being kept at a loss or at only a small profit. The depressing influence of poor cows will be eliminated when the dairy farmer keeps records of his individual cows, so as to discover and remove all star boarders.—D. H. Otis in *Wallaces' Farmer*.

Disinfectants

THERE are three or four words which are used by farmers as practically synonymous, but which have a distinct difference in meaning—disinfectant, antiseptic, deodorant, germicide.

Every good disinfectant must be a germicide; that is, must kill germs. An antiseptic prevents the growth of the germ, but does not kill it. A deodorizer simply deadens bad smells, and may not be a disinfectant at all. The high-smelling disinfectants are generally deodorants and often of little value as germicides.

Professor Ross of the Wisconsin Experiment Station regards corrosive sublimate, which is a most excellent germicide, as dangerous, on account of the deadliness of the poison, and sometimes useless, on account of forming chemical combinations.

He regards a good, strong solution of copperas as a good disinfectant. One of the best and cheapest is six ounces of chloride of lime to a gallon of water; and provided the lime is strictly fresh, whitewash is still better. Other disinfectants are the dips advertised in all agricultural papers.—*Wallaces' Farmer*.

Gardening

By T. Greiner

Home-Made Vinegar

When we have a lot of good vegetables that are fit for making into pickles (and pickles often come very handy and acceptable during winter and early spring in any household) we must have good vinegar. Of course, we always have our own supply of good, home-made cider vinegar. In fact, I make a barrel of cider every fall chiefly for filling up the vinegar barrel or for making a new lot of vinegar.

One of our lady readers now asks for directions "how to make vinegar out of stale beer." Now, I know that fairly good vinegar can be made from a good many things besides cider—for instance, fermented apple and pear parings in water, molasses water, honey water, perhaps even watermelon juice, etc. I have heard also that it can be made from stale beer. Perhaps that may be a better use for beer than that to which much of it is being put. But I think cider is good enough for vinegar and I do not particularly recommend beer.

Put the fruit juice or grain soup—any such liquid that contains starch and sugar, anything that will develop alcohol—into a vinegar barrel, leaving this in a warm cellar or other place, and let it finish the first stage of fermentation. Then add a gallon or two of good cider vinegar, and leave it, with the bung hole covered with fine wire screen, but otherwise open, until the vinegar is made. It can then be racked off and put in barrels or kegs kept tightly closed.

Using Arsenate of Lead

A lady reader in Ohio wants to know how much arsenate of lead to put into one gallon of water to make it of the right strength for all sorts of vines; also how to mix the lead and soda together.

Arsenate of lead is really so good a thing for the purposes of poisoning the various insect enemies of garden crops that it is a pity it is not more readily obtainable by the average home grower. It ought to be kept in stock in every hardware and every drug store, in small as well as large quantities. To make it at home in small quantities is hardly practicable. We can get acetate of lead (sugar of lead) at any druggist's; but when we ask for arsenate of soda, even at the larger drug stores in large cities, we will most likely be told that they do not have it in stock, and don't care to order it for us unless we are prepared to take a quantity of it. Most seed stores, however, which keep a full assortment of garden requisites, also sell arsenate of lead in smaller packages. I found it, for instance, in a Buffalo seed store, done up in glass cans, containing respectively about five pounds, two and one half pounds and about one pound, the latter costing twenty-five cents. In large quantities it is, of course, much cheaper. But when we can get for twenty-five cents a quantity of this poison which is enough to make ten or fifteen gallons of spray liquid, and to protect an acre or two of vine plants from the ravages of beetles, we "have no kick coming" on the grounds of expense. An ounce or a little over of the lead-arsenate paste will be sufficient to make a gallon of liquid for spraying on vines. Its effects are lasting, but I prefer to repeat the application, and I almost always apply the poison in Bordeaux mixture.

Garden Sprayers

The large potato grower has his barrel or tank on wheels, the pump geared to the wheel, and he sprays two, three or four rows at one bout. For spraying an acre or two of potatoes I have used with much satisfaction a barrow sprayer, with pump also geared to the wheel, and spraying two rows at a bout. At that time I had a horse that I could trust to go without lines and that would stay in the rows and make the turn properly at the ends without other guidance than the word of mouth. I hitched this horse to the barrow with a rope long enough so that the animal was ahead of the reach of the spray. This arrangement worked well. It made spraying comparatively easy, and when I ran the barrow going and returning in the same row, so as to spray each row from two opposite directions, it also made very thorough work.

At present, for all my moderate-scale operations, I now use a good knapsack sprayer with copper tank. This is fully efficient enough and satisfactory for cov-

ering an acre or two, although it is good solid work for a man of average build. I cannot say that I particularly fancy this work. But if the pump and nozzles are kept in good working order, and the tank from leaking, I believe we often have to do more unpleasant jobs on the farm than spraying. I also use the knapsack for spraying my various patches of vines, such as melons, cucumbers, squashes, etc.

For use in the home garden, where the hills often count by dozens rather than hundreds or thousands, one of the small hand sprayers, such as we use to spray our horses and especially cattle to protect them from flies, will do. Such a sprayer may be bought at the hardware or seed store for from fifty cents to one dollar.

Making Bordeaux Mixture

A Wisconsin reader says he wants to spray his potatoes for blight this season, and to add Paris green also for bugs if that can be done without risk.

I surely advise every potato grower to spray for blight, and to add something for "bugs," too. I do not use Paris green any more, as arsenate of lead is so much better and safer. The addition of such poisons, of course, is risky for the "bugs," but not for the plants, nor for the one who uses it if its use is attended with the proper care.

The quantities of the ingredients used depend altogether on the size of the patch and of the plants to be sprayed. There is no use to make more than we will use up immediately. I like to have my mixtures freshly made every time. So if I have an acre of potatoes to spray and the vines are already of some size, I take four pounds of copper sulphate and dissolve this in about twenty-five gallons of water by keeping the copper (done up in a coarse cloth) suspended near the surface of the water in the barrel, just submerged, until it is all dissolved. At the same time I slake five or six pounds of fresh stone lime, of best quality, in water, and make a milk of lime of it by adding water enough to make twenty-five gallons. Then I dip up a pailful or dipperful of the copper solution, and pour it gradually into another empty barrel, while an assistant at the same time dips up and pours into the same barrel a pailful or dipperful of the milk of lime. The two liquids thus become thoroughly and intimately mixed, and form the compound known as Bordeaux mixture.

Usually I keep a small vial containing a solution of yellow prussiate of potassium on hand to test the mixture. I just drop a drop or two of the solution into the mixture. If it makes a brownish spot or blotch in the mixture, more milk of lime must be added. When there is no discoloration, the mixture contains a sufficiency of lime.

At times, however, I need only a small quantity of Bordeaux; as, for instance, for treating a few hundred melon, cucumber or similar vines, or a little patch of early potatoes in the home garden. Then I mix only the corresponding quantities of the two liquids, and keep the balance of each separate. Neither the copper sulphate in solution nor the milk of lime will deteriorate if kept for a few days or weeks. The combined mixture would. Home growers often require only a bucketful or two of the mixture. One pound of copper sulphate and one and one fourth of lime will make about twelve gallons of the mixture, or two ounces and two and one half respectively of the ingredients will make a two-gallon bucket about three fourths full. In any case the mixture should be compounded strictly according to the directions here given.

Tomato Blight

A Tennessee reader complains that for the past two years his tomatoes have been ruined by a disease which attacks the plants, then quite thrifty and promising, at about the time when the fruit gets to be of the size of marbles. The plant begins to wither, the leaves near the ground turn yellow, and the plant then gradually dies, appearing as if scalded.

This may be the bacterial blight which affects the entire plant all at once, every part of it withering, and death of the whole plant soon following. Change of location of the tomato patch is about the only thing that can be recommended. Should this disease, however, be the common tomato leaf blight, a fungous disease, helped along possibly by the work of flea beetles, then the thorough and repeated spraying with Bordeaux mixture, preferably in full strength, would be likely to save the plants.

Fruit Growing

By Samuel B. Green

Canning Factory

G. M., Walker, Minnesota—I see no reason why a factory for canning blueberries should not be a success in your section. There is a large number of factories canning blueberries in Maine, and the industry has proven very profitable. In fact, in that section the owners of blueberry lands rent them or manage them themselves, so as to secure good conditions for continuous crops. For instance, they plan to burn over the blueberry land once in four years. The year following the burning they get a good crop.

The best publications along this line, and the only ones that I am acquainted with of material interest, are the bulletins of the Maine Experiment Station on the blueberry industry of Maine. I think you can obtain these bulletins by addressing Director Wood, Orono, Maine.

As for canning vegetables, of course if you have a plant suitable for canning blueberries, you should plan to use it through the whole season, beginning with peas and perhaps ending with string beans about the time your blueberries begin to come. If you should find that the blueberry crop is going to be light, you could plan to continue using your canning plant for other crops, such as late string beans, beets, cucumbers, etc.

Success in any business is largely a personal matter, and I should hesitate to tell you that there either was or was not money for you in the canning industry. I believe, however, that there are good openings for that industry in some parts of northern Minnesota and Wisconsin. During the last few years the price of canned goods has been high. I have known, however, of a succession of years when the prices were quite low and the holders of stock in canneries were quite discouraged.

Killing Dandelions by Spraying

E. M. V., St. Paul, Minnesota—In regard to the matter of using a solution of sulphate of iron for killing dandelions is something with which I have been experimenting this season. The best work that has been done along this line is that by Prof. L. H. Bolley, of Fargo, North Dakota, who reports that he has been fairly successful with it and recommends it. I would suggest that you write him for a copy of his bulletin on this subject.

I have not yet got far enough along with my experiments to make a final report. I find, however, that the dandelion is badly injured by spraying with sulphate of iron at the rate of one and one half pounds to one gallon of water, which solution does not seem to affect the blue grass. Several sprayings, however, will have to be made throughout the season in order to destroy the dandelion. It should be applied with a force pump and fine-spray nozzle, so as to reach all parts of the top of the dandelion. Professor Bolley recommends that the lawns be sprayed for killing dandelion about once each month and that the sod be kept thick by sowing blue grass on it in the early spring and again in mid-summer.

Black Knot on Quince

H. G., Santa Cruz, California—You state that your quince tree has black knots on it. I have never seen a disease of this kind that was a serious injury to quinces, and confess that I am puzzled and would like you to send me a sample by mail. Probably the best treatment for this disease is to cut off and burn the infected growth; but if it occurs on the stem of the tree, where it cannot be removed without serious injury, then cut away as much of it as seems reasonable, and paint over the wound with Bordeaux mixture or with a coat of white lead and oil.

The Strength of Exposed Trees

K. & J., Tracy, Minnesota—As to whether the outside trees of a planted grove in the prairie section of Minnesota are, by reason of their exposure to winds and storms, of greater strength than the trees in the interior of the grove, I would say that trees that grow in the open develop a form that better resists wind than those that are protected.

The trees around the outside of woodlands are sometimes referred to as the curtain. Their branches generally reach close to the ground and serve to keep the wind out of the interior, which is important. Trees that have been grown in places where they are protected from the wind have long stems and open growth and do not offer the proper wind protec-

tion. If the outside trees are cut down, these often blow down as a result.

This is not so common in the case of our deep-rooted trees on rather dry, porous soil; but where the soil is moist, as in some of our spruce swamps, it is bad policy to remove the curtain from around stands of this timber, as the wind gets in and blow-downs are common.

Bugs on Currant and Rose Bushes

Mrs. E. M. C., Mount Pleasant, Pennsylvania—I do not know what bugs you refer to as eating the leaves off of rose bushes. I think you will find the best remedy to keep bugs off of currant bushes is Paris green and water, using it at the rate of one tablespoonful of Paris green to a pailful of water, and sprinkle it on the foliage. There is no danger of poisoning from the use of this material at any time before the fruit colors up.

If the bug that is troublesome on your rose bushes is what is commonly known as the true rose bug, which is a rather sluggish-looking beetle with hairy legs, you will find the best remedy is hand picking from the bushes. This insect cannot be successfully poisoned.

Killing Out Dandelion

J. McR. & Sons, Graceville, Indiana—The dandelion plant is a perennial—that is, it lives continually and for no definite period. There is no question, however, but what the dandelion plants would be destroyed if the tops were kept cut down for one season; but this is a very difficult thing to do under the conditions under which we ordinarily find these plants growing. Picking off the flowers for one season or more would not kill them out. I have no doubt but what sulphate of iron will also kill out the dandelion, but the trouble is, if used in sufficient quantity to accomplish this, it is likely to kill everything else.

The dandelion has a large and very vigorous root, and only the top of the root would be killed by anything of this sort that one applies to it in a small way.

Oyster-Shell Bark Louse and Canker Worm

Mrs. I. W., Reno, Pennsylvania—The twig of the apple tree which you sent is badly infested with what is known as oyster-shell bark louse. This is a kind of scale insect that is very troublesome in some sections. The simplest remedy for you to use is probably whitewash, applied in winter, when the tree is dormant. It cannot be used in the growing season to advantage. In the growing season the best remedy is strong whale-oil soap, and this should be applied just as the little eggs under the scales hatch out and the young begin to distribute themselves about the tree. This will probably be in the latter part of June. At such time the young are very soft, and are easily destroyed by the ordinary whale-oil soap or by kerosene emulsion.

I think the worm which you describe as eating the foliage of the apple trees, and when jarred would spin down on a thread, is the ordinary canker worm. The best treatment for it is spraying the foliage with Paris green and water, at the rate of one pound to one hundred gallons of water.

Plantain in Lawn

W. C. N., Jones, Wisconsin—Plantain is an annual plant that is very troublesome in lawns. Perhaps the best remedy is to dig it up in summer before the plants produce seed. Where there is only a small amount of it, it can be weeded out by hand, and I have generally followed this latter practise. It produces seed from the latter part of August on into autumn, and if it is kept from going to seed for two years it will be entirely gotten rid of. I think the chances are that you sowed the seed of it with the grass seed when you made your lawn.

Insect on Cherry Trees

L. H., Washington, Indiana—I do not know what insect you refer to as being a bug or worm that eats the life out of your cherry trees. I wish you would tell me definitely whether the injury is done to the leaves, the twigs, the trunk, the roots, or whether it eats up all the leaves or simply sucks them and the leaves dry up, or whether it eats off the green surface of the leaves and they remain skeletonized.

Live Stock and Dairy

Useful Facts for the Stock Raiser and Dairyman

Notes on the Horse

COLTS should be kept together while being weaned, because the companionship helps them sooner to forget their dams, and keeps them from fretting.

A horse that is to be used for driving or riding should carry no more extra flesh than is essential to plump muscles and strength, and it should have sufficient exercise every day to harden its muscles and give it good wind.

Unless a horse lies down regularly, his rest is never complete, and his joints and sinews will stiffen. While it is true that some horses will sleep in a standing position, and continue to work for many years, it is equally true that they would wear much better if they rested naturally.

Three times a day, in hot summer weather, probably pulling on a dead strain all the time, is not often enough for the work horse to be watered. The average man finds it necessary under such conditions to drink much oftener. The man who works the horse ought to make provision for watering the animal as often as he waters himself.

The experienced trainer will be patient and not require too much of a colt at the start, but will gradually bring it in contact with all imaginary dangers until it learns from experience that they are harmless. No thoughtful or intelligent person will ever abuse a colt for being afraid of anything, for it simply intensifies its fear and makes matters worse.

It has been found that when farmers go into the market to buy good draft horses they must often take second-class animals or take none. There are buyers constantly in these markets looking for heavy horses with more than ordinary merit, and these buyers always pay top-notch prices. A good colt or two is a good asset on any farm; but while you are at it, have a big, lusty fellow coming on.

W.M. H. UNDERWOOD.

Making Good Butter

BUTTER making is so general that a great many people think there is little to be learned regarding it, but the making of a high grade of butter is a very difficult matter if one does not thoroughly understand all of the requirements. A factor which is positively necessary first, last and all the time is perfect cleanliness. The stables must be clean, light and airy; the cows healthy, well groomed, and their feed of the best quality.

In milking my cows I exercise especial care that no foreign matter contaminates the milk in any way. As soon as the milk is drawn from the cows it is strained through four thicknesses of cheese cloth and run through the separator. The cream is immediately cooled in a bucket with a perforated lid to a temperature of fifty degrees Fahrenheit. Great care is taken to have all of the animal heat removed from the cream before it is put in the can.

Sal soda is used in washing all of the dairy utensils, after which they are thoroughly scalded and sunned every day. The cream separator is taken apart and each piece well washed after every milking.

When a sufficient quantity of cream has been gathered for a churning, having been kept perfectly sweet, it is set in a large vessel of boiling water to warm. This is done by using a large can and setting it in a large dish pan of water on the stove, and stirring continually until the temperature has reached seventy-two degrees, when it is removed and set to ripen where the temperature of the cream will remain the same for twelve hours. When the cream has become thick and ripe it is cooled to sixty-two degrees and churned.

Just as soon as the butter breaks into grains the size of wheat the buttermilk is drawn off and a bucketful of moderately cold water is poured into the churn and the churn given a few turns to gather the butter. The butter is then taken out and weighed, and one ounce of salt added to every pound of butter.

The butter is put on the butter worker, which has been previously scalded and cooled with water. Salt is mixed thoroughly with a rolling and turning motion, never stroking or slicking, which would spoil the grain. The butter is then covered neatly and stood in a cool place for several hours, when it is worked sufficiently as not to be mottled, and then printed in one-pound prints. The print is scalded and left in cold water before

being used. Each pound of butter is neatly wrapped in butter paper, after which it is placed in butter carriers ready for the market. In summer ice is kept in the butter box, which is made of zinc, but is never placed on the butter.

I have no trouble in getting ten cents a pound more than the market price for the butter in my home town. My herd of cows being registered Guernseys, the butter is naturally of a golden tint, but when necessary I add color sufficient to give June tint. I use perfectly pure salt, and am very careful to have nothing with an odor come in contact with the butter, for it would absorb the taste very readily.

W.M. H. UNDERWOOD.

Likes to Raise Hogs

MY EXPERIENCE in raising Poland-China hogs covers a period of more than forty-five years. I used to raise them when a boy on my father's farm, and have always given them the best of care and attention and tried to see what fine specimens I could produce.

I never breed sows until they are one year old or over, and always select the very best gilts, those being as near like their mothers, as I can get. I love the work of feeding and caring for my hogs and looking after their welfare. They are never bothered with the cholera, and I keep coal cinders, ashes and salt before them at all times.

I trust to no man in the care or feeding, as I attend to that myself. I have movable houses for the sows, and all gilts are kept in one pasture and the pigs in another.

W. HANSON.

Improving the Herd

I SAT on the bridge with the sweet perfumes of the spring blossoms drifting about me—elderberry and choke cherry mixed with currant and wild plum. Below me a little stream sparkled and bubbled and sent up a cool vapor which made my nostrils spread and my lungs expand to their full capacity to drink in the fragrant atmosphere. In the meadow just across the way and a little farther down, on a carpet of ankle-deep soft grass, my herd of twenty-five white faces was grazing. I was proud of them, and it was to watch them that I had taken a seat there on the bridge.

"Hello!"

I looked up, surprised. So busy had I been in watching my cattle that I did not see my neighbor coming until I heard his straight-from-the-heart "hello!" He took a seat by my side and his gaze wandered down to the meadow.

"Yours?" he said, referring to the cattle.

"Yes," I replied; "I sold my mixed bunch and bought these. Put a little more money in these than I got for the others, of course, but they're so much better, too. They're the beef type."

"They look good! But you don't mean to say they're all registered?"

"Oh, no; only five—the gentleman at the lead' and four cows. I would like to have had them all registered, but I didn't have the means. It costs consider-

able to buy registered stock, you know. I thought the five would be a pretty good start in full bloods. Of course, the four cows were not enough for me, so I bought the twenty grade cows. I got them cheaper. They are three-fourths. I do not expect to sell any fancy-priced calves from them, but you know it always makes a herd look better if they are all of the same color. You see they are all well marked. I was very particular about that. Their calves will sell as well for beef as the others. So I will not be cut down any there. Oh, yes, I expect to sell some of the calves of the registered cows at fancy prices—that is, the male calves. I will keep the heifer calves myself, and as I get more of them I will sell off the grade cows until I have all full bloods. You see, we youngsters have to start in a little slow."

"Yes, we have to start in a little slow, that's so. I think you're working on a good plan. I've been thinking of getting some full bloods, too, but I've never really seen my way until now. I believe I'll start right in, too. I might as well be raising full-blood stock as to raise scrubs, even if it is only a few at first."

"Yes, start right in now," I replied, and to you, brother farmer, if you have not full-blood stock, I say start right in now. You might as well be raising full bloods as to raise scrubs, even if you have to start in with only a few at first.

GREGOR H. GLITZKE.

Contagious Abortion in Cattle

IT is the experience of many stock breeders that their in-calf cows do not go their full time, but prematurely slip the calf. This of course may be the result of an accident, but in the great majority of cases it is due to contagious disease. This disease is caused by certain germs, which can be conveyed by one animal to another by contact, by the hand of attendants and by tools and utensils. The chief means of spreading the disease, however, appears to be the bull, which receives the germs of the disease when serving a cow that has aborted, and conveys them to the cows which he subsequently serves.

The majority of farmers are not aware of the fact that a cow that comes in season shortly after she is supposed to be safely in calf is often suffering from this disease. Abortion, in fact, may take place at any time—from a month after service to within a few weeks of calving—but experience teaches that abortion most frequently takes place shortly after the cow has conceived or when she is about five or six months gone in calf. Abortion in the latter case is easily observed, because of the size of the calf. In the former case it is scarcely ever noticed, and the great majority of farmers never suspect that their cows have aborted.

Abortion may be warded off by attending carefully to preventive measures or gotten rid of by treating the disease when the first symptoms appear. Since the germs thrive best in filth, darkness and foul air, it will be necessary for each farmer who wishes to get rid of them to have the cow sheds thoroughly cleaned and provided with good concrete floors. Much of the trouble is due to badly paved floors, which soak up the moisture contained in the discharge from affected cows, and which in many cases are saturated with filth. Cow sheds should be thoroughly and frequently swept out, the walls whitewashed and the floors disinfected at intervals with a solution of sulphate of copper, using about two pounds of pure copper sulphate to ten gallons of water. It will repay farmers to have the floors of their cow stables concreted, for not only will this conduce to the health of the animals, but they will find that the stables can be cleaned daily with very much less labor than when the floors are of earth or roughly paved.

The sheds should be well lighted and well ventilated, for sunlight and fresh air are enemies of most diseases. The prevention of abortion consists in disinfection—that is, poisoning the germs of the disease. Reference has already been made to the use of sulphate of copper for disinfecting purposes.

Cows suspected of this disease should not be housed with the others, nor allowed to graze on the same pasture, which would be soiled by their discharges. They should be shut up alone, and the disinfecting fluid should be freely used, to render the discharges from them harmless. Cleanings from aborted cows should be burned.

In some districts it is believed that abortion can be prevented by the use of carbolic acid. This should be injected with a special syringe under the skin; but as this would require training to carry out properly most stock owners must be content to give carbolic acid in the mash or to employ a veterinarian to give injections. The dose to be mixed with a mash is one sixteenth of an ounce of pure liquid carbolic acid, which should be mixed with plenty of water. The dose may be gradually increased until it is doubled. The carbolic acid should be given three times a week.

W. R. GILBERT.

Dairy Notes

KEEP salt where your cows can get at it every day in the year. The animals require it.

The amount of feed required to mature a steer will bring much more if fed to produce dairy products.

It takes a good, strong machine to give the best results, and for converting food into milk or butter the large, vigorous cow is no exception.

One gallon of crude petroleum, one half gallon of kerosene, one half gallon of fish oil and one cupful of crude carbolic acid mixed together and applied in a spray over the cows at least once a day will protect them from the torture of the flies.

A large proportion of milk is composed of water, therefore the cows should always be able to get plenty of it to drink. This should be pure, clean water if the quality and quantity of the milk is to be up to the standard. Cows giving milk consume about twice as much water as those not giving milk.

GILBERT ALLEN.

Poor Sanitary Conditions of Creameries and Dairies in Michigan

"A LARGE per cent of Michigan's creameries are owned by corporations which seem to have located them with no regard to sanitary conditions whatever," said Mr. E. A. Havens, deputy dairy and food commissioner, before a dairy class at the Michigan Agricultural College recently.

They are located very often on low ground, where there is no natural or artificial drainage, many being situated near small streams, into which the waste products are carried. This not only pollutes the stream, but produces a very unsanitary condition.

The ideal creamery is located on a raised of ground, and the waste products drained into two septic tanks, the first one to allow the action of the bacteria to run its course, and the second to prepare it to be run off, in a sanitary condition, into a stream, if one is available.

It is queer that a large per cent of the creameries do not look after their milk and cream as they should. An unclean man in a plant not only does unclean work about the creamery, but he exerts an unhealthy moral influence over the patrons of that creamery. A particular, cleanly man can exert the opposite influence, and by lecturing to his patrons when milk is delivered at the stand can accomplish wonders in raising the sanitary standard of the milk that is brought to the plant.

True, many are in the creamery business who should not be. They are not sanitary; they do not attend to details in any particular thing. The creamery man must show by example, not precept. He cannot call attention to his patrons' unsanitary conditions when his own institution is not cleanly.

Sanitation begins at the farm. In the vicinity of Detroit there are two thousand farmers who ship milk into the city, and some of them are keeping six to eight cows in ten-by-twelve stables. In these barns there is no ventilation, no sunlight, and the cracks are stuffed with straw. One owner of a dairy, who is connected with a Grand Rapids sanitary milk plant, cools his milk in a stream that runs first through his barn yard and then into the milk house. The milk dipper is first washed in this creek and then put into the milk.

Many of the creameries of Michigan are put up on the "Cheap John" order of construction, with no idea of the future, the main thought being to make money on the investment at the start. One man owns twelve or fifteen plants, all of which are in a broken-down state. Many of the creameries about the state have very bad floors, and the drainage is poor.

The Rochester creamery plant supplies milk to the Walker-Gordon laboratory in Detroit, which handles certified and modified milk. To this company physicians send prescriptions for milk, stating that they want certified milk of a certain quality—that is, it is to contain a certain per cent of fat, casein, etc. The prescription is filled as prescribed, and returned. On this farm the sanitary conditions are ideal, and the company guarantees that the milk will not contain more than ten thousand germs to the cubic centimeter. But the bacterial analysis usually runs lower, from four thousand to seven thousand to the cubic centimeter. This shows what can be done. Out of the eight hundred children raised last year on this certified milk, only one died from bowel trouble.

When a farm dairy is inspected, a score card is used, which has a total of five hundred points, distributed to cover these conditions:

1. Healthfulness of the herd.
2. Light and ventilation.
3. Sanitation practised.
4. Condition of implements and utensils.
5. Cleanliness of cows and stables.
6. Milk, how cared for.

A dairy scoring four hundred and fifty is excellent, four hundred is good, below four hundred poor.

EDWY B. REIN.

Live Stock and Dairy

Growing and Developing Good Draft Horses

I WOULD not advise the average farmer to go into the business of breeding, growing and developing draft horses for market unless he is a good feeder and naturally takes pride in driving and handling the better class of horses. It requires skill and a liberal system of feeding to grow and properly develop a high-grade draft horse, and the actual difference in cost between growing the right kind and mongrels is so very small that it is folly to go into the business with a lot of old scrub mares and depend upon the good qualities of the stallion to correct their natural weaknesses and deformities in the progeny.

The man who knows how to care for and feed his work team so that they will keep in good flesh and vigorous condition can afford to put a few hundred dollars into a few good brood mares and grow horses for market. The farmer who is in a position to market one or two good draft teams every year has an addition to his income that is from a much easier and more certain source than many other branches of live-stock raising and feeding. After selecting a few well-bred mares that are sound and free from all hereditary disease, mate them with a stallion of one of the leading breeds and one that is not only a good individual, but a true type and representative of his breed.

The stallion should not weigh to exceed five hundred pounds more than the mares with which he is to be mated. In all lines of live-stock breeding we find that

When the mare does not foal after protracted efforts, veterinary aid should be summoned at once, for delay often results in the loss of either the mare or foal, and many times both. As soon as the colt is born and pulsation ceases, the navel should be tied with a string about three inches below the body, and then severed about two inches below where it has been corded. The string should be disinfected and the whole navel region disinfected by sprinkling with a powder made from sulphur and tannic acid mixed, equal parts. This should be done several times until well healed.

After the colt has nursed, close watch should be kept of its bowels, and if they are not in proper condition, do not give a dose of physic, but use a syringe, and the cause will be removed without danger of deranging and interfering with the whole digestive system.

Turning the Mare and Colt on Grass

When the mare has been kept at work up to a short time before foaling, and has been fed a grain ration, and then after foaling is turned out to pasture with her foal, it is safe to say that her death warrant is ready to be signed. Mares that have been worked moderately up to the time they are due to foal are pretty certain to have good, husky colts, and after the colt gets a good start on its dam's milk, that has been formed from rich grain food, all goes well until she is turned out on grass. Then the com-

away entirely. After the colt has been removed it is essential that the mare have good care, and her udder should be bathed at least once every day with cold water and spirits of camphor. This dries up the milk glands and prevents the udder from becoming caked and feverish.

When the colt is taken from the mare he should have a box stall that is well lighted and ventilated. The box stall will afford him more exercise than a single stall. After giving him a box stall, do not think he should have no more exercise, but turn him out every good day and allow him to run around the yards. Bran and oats make a good grain ration, and clover and timothy mixed hay make a good hay ration.

Feeding the Young Colt

The feeder is the only man who can tell how much food the colts require for their best growth and development. They should have only what will be cleaned up at one feeding. Nothing will make a colt grow unthrifty faster than allowing stale food to collect in the mangers from one feeding time to the next. Their digestive organs need rest at times. The colt should never lose its foal flesh, but be kept on the gain from birth to maturity on a ration adapted to its needs. The stall should be kept clean and the colt's hoofs must be watched and kept trimmed, to prevent them from growing in the wrong direction. From the time the colt is weaned until fully grown it should have a ration of bone and muscle forming food and be given the run of a good pasture at all times when the weather is thought to be favorable.

Training the Colts

I believe that the colt should be trained to do light work during the third year. This makes faster walkers and has a tendency to make them more graceful. Walking is the best gait a work team may possess, and everything possible should be done to cultivate a quick and easy gait.

Much judgment and patience are necessary in training colts. One with a nervous temperament should be treated with kindness and not be allowed to become scared or excited. Training is so much a matter of judgment on the part of the man who is handling the colt that it is not my purpose to lay down any definite plan for training the colt. It would be well if every farmer would keep professional horse breakers off their farms and handle their colts with more kindness and common sense.

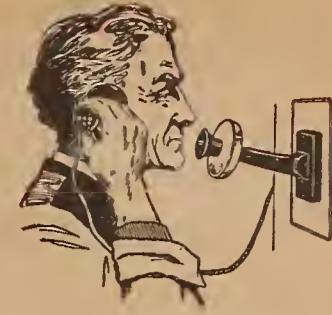
Fitting for Market

When the horses are to be sold in the horse markets of the country it is essential that they show quality and finish, the same as beef cattle. While there is no denying the fact that many horses are injured by overfitting for market, yet so long as the market demands this class of horses, the ones that are the most highly conditioned will bring the most money.

In many locations, especially in the Eastern states, good markets may be found right at home; but this home market calls for four or five year old teams that have been worked for one or two years and that are not especially fitted for market. This branch of the trade I believe is more profitable for many growers to supply, as they may use their teams for one to three years and then dispose of them at a good price without going to the expense of conditioning. Location and conditions determine which method is the most profitable to follow in your case.

The aim of the breeder and grower should be to supply what the market demands. Visit the open market and learn the types of animals that sell for the most money, and after deciding what kind sells the best, strive by undaunted perseverance and methodical selection to produce the best horse of that particular class. Correct ideas and breeding for that one special purpose will bring results. A heavy horse with a blocky conformation, heavy bone, sound feet and a prompt, resolute action is the kind that brings home the money in every market. There are numerous market classifications, but there is no true way to study the classes except by studying them while they are being sold. and judge for yourself the kind you are best prepared to grow and develop. Don't attempt to breed all types and classes, or you will make a mess of the whole business and have a class of horses that will sell for less than it costs to grow, develop and condition them for market.

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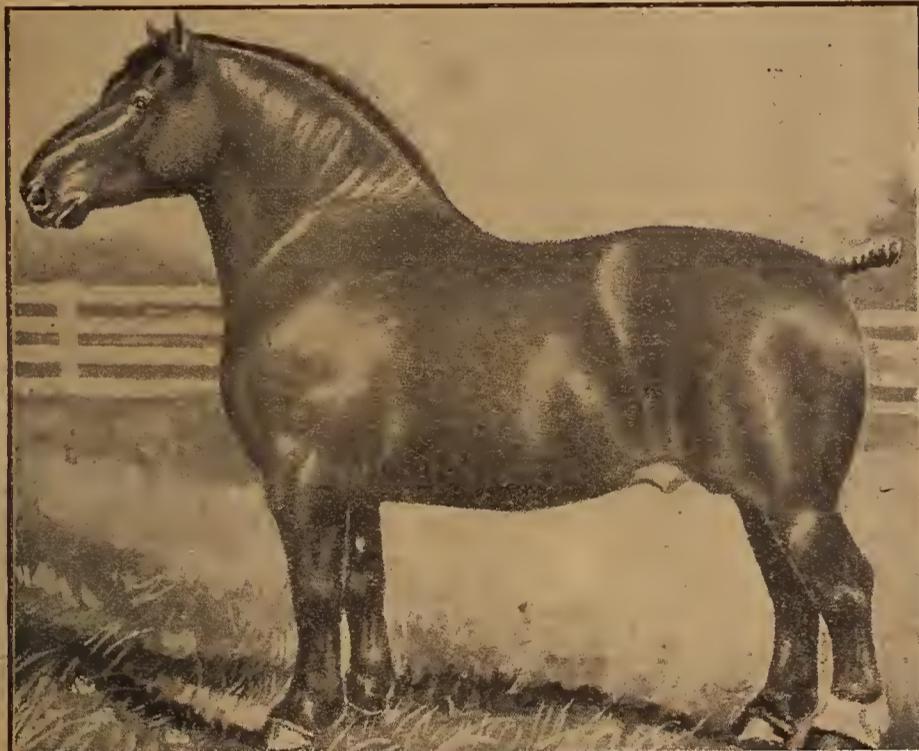
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Care of the Brood Mares

The mare should be fed at all times with a liberal amount of clean and nourishing food, and should have an abundance of pure water. The feeding should be done with caution and she should have no more at one time than she will eat up clean. When a mare relishes her food it is good evidence that she is thriving. Oats and bran, with perhaps an ear of corn, especially if she is being kept at work, form an ideal grain ration, and the amount may be regulated by the amount of work she is compelled to do and her general flesh and appetite. All of the hay should be clean and free from dust.

As foaling time approaches, the mare needs the best of care and the most careful feeding. Much of the risk usually common while mares are foaling can be eliminated by careful feeding; her supply of milk may be regulated so that it will not form a hard and caked udder. I believe that as a rule it will be safer to withhold all rich, milk-producing food for a few days before she is due to foal. After she has foaled, especially if she gives promise of being a heavy milker, she should be fed very sparingly until her milk flow becomes regulated to meet the demands of the foal. If the mare is a scanty milker it will be necessary to feed her a more liberal ration of milk-producing food.

position of the milk is changed, and the grass milk is like so much poison to the colt; its bowels become loose, and he sucks more and more, until at last he has the scours and dies. This result is not caused by eating poison grasses or weeds, but by the sudden change in the composition of the mare's milk due to change of food.

When it is desired to turn the mare and colt out to grass, get them accustomed gradually. When the mare is allowed to run in the pasture at night, and fed a full grain ration, she may be safely turned out to grass with her foal, but her grain food should be continued to insure the best results. Mares and their colts should have a little grain food every day, although not every one will follow this practise.

Weaning the Colt

The loss of flesh and condition may be reduced to a minimum during weaning time if the colt is taught to eat grain with its dam before it is weaned. It is not the best practise to feed the colt large quantities of grain while with the mare, but rather to get him to eating small amounts. Teach him to stand tied with a halter before weaning, so that he will not fret when taken away from the mare. Colts that are accustomed to being led and tied are much easier to manage during weaning time than those that have never been handled.

About six months of age is the proper time to wean a strong colt. Many good horsemen prefer to wean them at once, while others wean them more gradually, allowing them to suck once a day for a number of days before they are taken

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Poultry Raising

Some Chicken Problems

A good friend says he has trouble with his little chicks picking each other savagely. He says, "They all start picking at one chick, often killing it. Why do they do it?"

I wonder what kind of chicks those are? They must have a great deal of the old Nick about them, just like some folks. Leghorns will sometimes get the notion of fighting that way, carrying the grudge they seem to have against one another on until they are several weeks old. There probably is a cause for this in the start in the food the chicks have to eat. Something that they need they do not find in the rations given them. So it stands us in hand to give as great a variety as we can. If chicks are running out over the fields there is little trouble from this source, for then the chicks are busy, having plenty of room to exercise, and then they get most things they need to eat.

This same friend says about his chicks, which, by the way, are incubator hatched, "They also huddle together at night, each one struggling to be underneath, until they are packed four or five deep, and smother each other to death."

Trying to get under something at night is the natural instinct of the little chick. It wants to be warm. It is hunting for the mother breast. Poor, little, motherless fellows! I'm sorry for them! If there is anything that is calculated to awaken sympathy more than a lot of motherless chicks, I do not know what it is, unless it be a family of boys and girls left in the same condition.

But about the chicks. We must keep them warm somehow if they are to do anything. By making a little brooder we can do this. A box with a small opening in front, for them to creep in, and furnished with fine straw or something else warm to snuggle into, and we are not likely to lose chicks this way.

Another friend thinks of crossing Indian Games and Barred Plymouth Rocks, and asks what would be the outcome for market and eggs and what the color would probably be.

This thing of experimenting with cross breeding is dangerous for the ordinary poultryman. Not much is to be gained by it, and it is my opinion that if our friend carries out his plan of crossing Indian Games with Barred Rocks he will have nothing but scrub stock in the course of a few years. Sometimes a cross of Indian Game with Wyandotte will give a good broiler or roaster. Quite likely a cross between Indian Game and Rocks would amount to the same thing; but after all, it is a question whether the gain would amount to much or not. I believe it is better for the most of us to keep the breeds as pure as we can, leaving the experimenting to men who know more about it than we do. As to the color of chicks that would be obtained by the cross our friend mentions, it would probably be far from satisfactory and by no means uniform. I doubt if any one could say with certainty what color would result.

E. L. VINCENT.

Egg Record

IN DECEMBER I started with eight laying hens, and increased to twenty-nine as the spring pullets began to lay. The egg record for the flock is as follows:

January	152 eggs.
February	231 "
March	479 "
April	558 "
May	504 "

The hens are White Leghorns and White Wyandottes. J. N. BRESEE.

Sports in Chickens

WE HAD been breeding Silver-Laced Wyandottes for six years. We had bought stock two or three times from different breeders, in order to get new blood, and while some chicks hatched were very much lighter in color than the standard called for, yet there was not a pure-white chick hatched in the six years.

Two years ago we bought a cockerel from a prominent breeder who claimed good breeding and that his stock was rich in the blood of the famous Orr Wyandottes. The first year we had about half a dozen pure-white chicks hatched in our flock. There was no possible opportunity for the chicks to have been mixed with a white breed, as there was not a white chicken on the place. I first attributed it to the eggs of some hen in the flock which was of a sportive nature, but the white sports were too numerous this year, since there has been at least

ten per cent of pure white chicks from a flock of fifty hens. The responsibility for the sportive tendency evidently rests upon the cockerel bought two years ago.

Hereafter I will not be satisfied with a cockerel with the proper color of feather, without also inquiring after the sportive tendency of the flock from which he is selected. An occasional sport is not sufficient evidence to condemn the breeding, but when it comes to eight or ten per cent it is too much of a sportive tendency.

A. J. LEGG.

The Fat Hen

WE ARE often told that to be in a prime egg-laying condition the hen should not be too fat. This is true, but it is quite often misunderstood. It does not mean that we should cut down to any great extent on the regular supply of food and allow the chickens to go hungry. Chickens that are expected to lay should have a regular supply of good, nutritious food.

To keep down the fat and to keep them in a healthy, egg-laying condition they should be given plenty of exercise. If a little grain could be scattered in a litter of straw, so that the chickens would have to work the straw around to get the grain, it would afford much exercise. Or, if it is convenient, it is well to have a small patch near the poultry yard which could be plowed about once a month. Chickens like to scratch in newly plowed ground, hunting for worms and bathing in the dust, and such exercise keeps down the fat.

GREGOR H. GLITZKE.

Poultry Profits on the Farm

IT is generally conceded that poultry and their product form a large percentage of the world's food supply. It cannot be questioned that the poultry business is becoming more and more an important branch of industry in the world, especially in the United States. The figures that tell the amount of eggs consumed annually seem fabulous. If poultry and their product occupy such a high position among the world's industries, how should the farmer regard the poultry department of his farm? For the money invested, no other branch of the farm gives greater profit. The labor required is hardly worth counting, for raising poultry on the farm saves half the care and attention that the poultryman of a regular poultry farm must give. Eggs bring prices yielding a good profit for the farmer, while poultry is not far behind in profit.

From my own experience and from reports from all over the country the demand for eggs is greater than the supply. I traveled one whole day trying to get a few dozen eggs for home use, and found just nine dozen. The country had been most thoroughly scoured by pedlers and grocerymen who were willing to pay the asking price in order to get a few eggs for their trade. Poultry and eggs are as staple as any of the products of the farm and always bring the ready cash. Why shouldn't the farmer look after his poultry department with more interest than he usually does, giving it his best thought and attention, when such a large profit is derived? The farmer must not forget that there is money in it now, though it has not always been so.

With improved breeds and better methods of caring for them the farmer can add much to his income. In the past chickens were kept by the good housewife for pin money; no profits were thought of. Occasionally a lover of fowls would make the experiment of raising poultry on a large scale, but invariably failed because of poor breeds and ignorance in their care. Not so many years ago an acquaintance of mine got the poultry fever and elected to raise poultry on a large scale, or what would then be called a large scale. He set out with high hopes, anticipating big results, but the first year was his last. Eggs then were cheap and not much in demand. His hens being all huddled together in one large flock took sick and died, and altogether it was a complete failure. He finished up the poultry business by burying his dead hens and his blasted hopes together in one common grave. Such was this man's experience, and all from not knowing how to properly manage a large flock. But it need not be the experience of any one now, with intelligent methods of management.

The study of poultry culture has become a science with poultry breeders and raisers, and they make a success of it. So can the farmer. But he must read up in books and agricultural papers on the latest methods of hen culture. A little good common sense of the farmer

will not come amiss in helping to success, for no one rule or method will apply equally well in all cases. Study the generalities of poultry raising and apply good sense in adapting them to the conditions. Right feeding from the chick to the full-grown hen is the most important. Next comes comfortable housing. Read and study these, and add a little common sense when applying, and you have about the whole theory of raising poultry successfully.

Another matter that most farmers do not fully appreciate is that of the droppings in the hen house. Hen manure is the richest kind of manure and the best for the farm, especially if the farm is run down and unproductive. Neither poultry nor eggs carry away fertilizing material when sold off the farm, as do hay, grain, straw, etc. There is no fertilizing matter in an egg to be carried away to the market. The farm is not robbed of anything that will make it richer by keeping poultry. Enlarge the poultry department of your farm, keep account of expenses and income, and note on which side the balance will be found at the end of the year.

C. V. WELLER.

Fattening Chickens

IT PAYS to fatten chickens before putting them upon the market; but there is a little knack about the fattening of chickens where the beginner, if he does not know of it, is almost sure to make a mistake, and that is by feeding too long. Don't feed any longer than ten or twelve days. If chickens are fed any longer, their appetite becomes poor and they begin to lose instead of gain in weight. This advice is given to those intending to feed in crates or pens, as is generally done on the average farm.

During the short feeding period they should be forced. Everything in the pen should be kept clean and dry. A bedding of bright straw or hay should be changed every day. It is not necessary to feed more than three times a day.

If there is one thing that excels all others for the fattening of chickens, I would say that it is ground oats, from which the hulls have been removed, mixed with a little corn meal and clover or alfalfa leaves, and the whole made into a stiff mash by wetting with sour milk. A new batch should be mixed for each feeding.

After the chickens have eaten all they care for, the trough in which they have been fed should be removed from the pen, and if anything still remains in it, it should be scraped out, so the trough will be clean for the next feeding.

GREGOR H. GLITZKE.

Not All High-Class Poultry is Suitable for the Farmer's Use

THERE are many instances where farmers have tried to improve their poultry that have resulted very unsatisfactorily to them. I have known of many who have had large flocks of hens that were well acclimated and free from disease, but in the production of eggs were a failure. They disposed of them and replaced them with pure-bred stock, which received no better care than the old flock, and consequently were no more satisfactory.

These improved fowls are more profitable when in the hands of those who know how to make them so and will take pains to care for them as they should be cared for. It sometimes happens that such birds are from high-scoring, fancy stock that has been weakened by being on exhibition too much, or by inbreeding, and under the care and attention which they receive on the ordinary farm prove a failure.

Stock that has been bred for years to bring out some fine points is very apt to be more sensitive to exposure and susceptible to disease than the common farm poultry. A good many who buy high-class stock do not expect or look for this, but it is a fact, nevertheless, and in purchasing birds or eggs for hatching from unknown flocks it will be well for buyers to keep this in mind. These results have caused a good many to become prejudiced against pure-bred fowls, while if suitable farm-raised, pure-bred birds had been secured from a strain that had not been bred exclusively for exhibition points for years, and some extra care had been devoted to the sanitary conditions of the hen house, and in feeding, etc., doubtless a greater profit would have been secured and the results would have been more gratifying.

Not all show stock lacks vigor; in fact, some of the strongest and hardiest birds are bred by fanciers who raise them on farms where they are given every chance for full and proper development. Then, some fanciers raise and keep so many birds that they are crowded from the time they are chicks until fully grown, and this cannot help but make them less vigorous and decrease their profitable qualities for the farmer's use.

VINCENT M. COUCH.

Farm Notes

Crimson Clover

I FIND crimson clover to be one of the most valuable forage plants we can grow. For our latitude no other leguminous plant but the cow pea will prove its equal as a land renovator as well as a hay plant. For pasture we have never grown anything that proves its equal. Its growing and thriving through the winter months, when other pastures fail, makes it exceedingly valuable.

We find that all stock relish it and do well on it. Pigs, colts and calves are especially fond of it and will make rapid gains when given access to it. We sow it near our poultry yards. The hens relish it and show their appreciation for it by giving a decided increase in the egg production.

For pasture we can get the best results by sowing three fourths or one bushel of winter oats and twelve pounds of crimson clover seed to the acre. The clover seems to do better when sown this way. Then, too, it gives us a greater variety of feed. We sow it in our young orchards, and get splendid results by so doing. It makes an excellent winter covering which protects the young trees from severe freezes. In the spring we cut this growth with disk harrow and allow it to decay on the soil, thus securing a large amount of vegetable matter and some nitrogen, which are very essential to the growing trees.

We also find it very valuable to sow in our corn at the last working. For this purpose we sow it alone at the rate of seventeen pounds to the acre, or sow it and soy beans or cow peas together, twelve pounds of clover seed and three fourths to one bushel of either beans or peas. The pea or bean vines protect the clover while it is young; later they decay on the soil, thus protecting and supporting it through the winter. We can also sow it alone or with the peas or beans after wheat or oat harvest. We can cut the bean or pea vines for hay and still have the crimson clover as a second hay crop or green manure crop to turn in the spring.

By sowing in corn land at the last plowing of corn, and after wheat and oat harvest we get an excellent winter covering for our soil that prevents soil leaching and surface washing. Then, too, when sown with the soy beans or cow peas we are able to grow one grain crop and two legume crops in our soil at the same time. By so doing we increase the profits from the soil and improve it at the same time.

When the clover is cut for hay it should be cut before it blooms, as there is some danger of feeding crimson clover hay that is cut after the blooms form. When we do not cut for hay, and turn the green mass for the benefit of the soil, we first cut the surface well with disk harrow and allow the growth to partly cure before turning. This prevents any danger of the land souring. When turned green without cutting, we give a top dressing of lime, from five hundred to eight hundred pounds to the acre.

We use it extensively to sow after Irish-potato harvest, and get splendid results from this sowing. On several experimental tests we found that the crops that followed crimson clover made from eight to twenty-three per cent more to the acre than crops where all other conditions were precisely the same.

The seed to sow one acre costs only seventy-five cents, and after getting a start one can clip the heads and save his own seed at one fourth this cost. The small farmer who has not land sufficient to grow red clover and other crops, too, can sow crimson clover in his cotton land or corn land at the last plowing, also after wheat, oat and potato

harvest, and greatly improve his land and grow other crops at the same time. It will also grow to a good height on land too poor to grow red clover, but when grown a few years it gets poor land in fine condition to catch and hold a stand of red clover.

My advice is to sow it on every available foot of land. Why let our soil leach and wash away when we are able to sow crimson clover and prevent it? In sowing it, do not expect it to thrive on half-prepared soil. Give it a chance and you will be many times repaid.

W. C. CROOK.

Destruction of Charlock in Grain Crops

AFTER carefully watching the charlock spraying operations for the past seven years, we have now reached a period when those who have sprayed well and regularly are able to notice a great diminution in the noxious weed, and have probably gone more than half way to its reduction to a negligible point.

From personal experience I know charlock can be eradicated from cultivated land in a few years if all reseeding is prevented. Many who began this practise early are reaching this desirable point, and are nearing the completion of their work, while others in large numbers, at different stages on the road, are traveling in the same direction.

The successful destruction of charlock in grain and other crops is now so well known and largely practised that it is no longer necessary to treat it as a newly introduced operation. All who cultivate charlock-infested land should by this time have become acquainted with the process, and it is now only necessary to repeat, for those who have not yet adopted charlock spraying, some of the advantages that arise from it, and give some reliable information that will be a guide to obtaining those advantages.

The heavy loss occasioned by growing a crop of this weed among grain is fully acknowledged, and is proved by practise to be equal to eight to sixteen bushels an acre. This loss can be avoided and a profit realized by a single spraying in one year, but by repeating the operation for a few years no reseeding of the land takes place, whilst the old seed in the land is gradually grown out, and the increased annual value of the land becomes permanent.

Charlock, like the turnip, is a cruciferous plant, and such enemies of the turnip as club root and turnip flea beetle are nourished and perpetuated by the charlock during the intervals of the turnip crop, so that the destruction of this noxious weed is all the more desirable.

These advantages alone should surely be sufficient to induce cultivators to adopt the easy and profitable method now available for ridding their land of this worst of all weeds.

The object of spraying charlock is to destroy the whole of it and prevent reseeding. The operation is sometimes very imperfectly done, arising very commonly from inefficient labor or imperfectly dissolving the copper sulphate.

The operation is simple, easy and rapid. The difference in cost between doing it badly and in the best way will not be more than twenty cents an acre, but the difference in result will be that in one case only sixty or seventy per cent of the weed will be destroyed, while in the other the whole of it will be killed, except perhaps a few straggling plants.

The spraying should be done when the crop is dry, and some few hours before rain. The spray should be fine and misty and the simple directions carried out.



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(1) That young charlock can be destroyed in growing grain crops without injury to the latter by spraying with fifty gallons of three-per-cent solution of copper sulphate (fifteen pounds to fifty gallons) for each acre of grain, and older charlock with a stronger solution.

(2) That the grain crops are much improved, and give a better yield, where the charlock is destroyed, and that young grass seeds and clover in the grain remain uninjured.

(3) That spraying early, when the weed is young and in soft fiber, is most profitable (but it can be quite successfully done just as the weed is coming into flower, or when in flower).

(4) That the larger machines are more successful than the smaller.

(5) That the profit derived from increased yield of grain is diminished in proportion to the delay which occurs after the charlock is first fit to spray.

(6) That the increased yield of grain by the destruction of the charlock leaves a substantial profit after all expenses of spraying have been defrayed, and that the value of all charlock-infested land increases until the extermination of the weed is complete.

W. R. GILBERT.

Thoughts for Farmers

The hen makes a splendid hobby to ride.

The potato crop is the root of much good.

One touch of garden makes the whole neighborhood kin.

Money makes the mare go, and the hoe makes the garden grow.

The man behind the successful poultry business is generally a woman.

The farmer takes the best of the farm to town and brings the best of the town back to the farm.

Farms are representative of things as they are; farm papers represent things as they ought to be.

If you must have ads on your barn and board fences, let them be about something you have to sell yourself.

The farmer, of all men, should be righteous. He has Nature, his crop and all his stock to encourage him.

Garden, and the world gardens with you; don't, and you have no lettuce to eat, or onions with which to flavor the dinner.

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Soil Wastage

ONE of the important subjects considered at the White House Conference on the Conservation of Natural Resources was the soil. So marvelous is the correlation between some of the natural resources that the conservation of one involves the conservation of others. Thus the conservation of the waters depends primarily on the conservation of the forests on the hillsides and mountain slopes. In turn hill forests regulate the flow of water, sending much of it through the soil instead of over its surface, thus preventing soil erosion. So, naturally, the subject of soils, soil wastage and soil improvement came up frequently for discussion in different papers read before the conference. The special address on the subject, however, was "Soil Wastage," by Dr. Thomas C. Chamberlin, an eminent geologist and president of the American Association for the Advancement of Science.

In the opening part of his address he referred to the production and renewal of soils as follows:

"Geologic deduction is that for long eras rains have fallen on the surface and soils have been produced, while they have also been washed away. Production and removal have run hand in hand, and yet they have been controlled to such a degree by the adjustments of Nature that no large part of the surface seems ever to have been so far denuded that plants could not flourish upon it. More than this, it appears that the ordinary adjustments of Nature make for increasing fertility of soil rather than depletion. . . . The gifts of the great past now present themselves to us as the product of a marvelous system of control which has checked excesses and forced movement toward the means in which has lain productivity and congeniality to life. . . .

"We do not hesitate to enter into the inheritance, but what part shall we take in this regulative system that produced and maintains it?

Production and Removal of Soils

"Let us turn at once to the basal factor in the problem, the rainfall, the soil, and soil wastage, the special theme of this hour. The rainfall is an inherited asset, the soil is an inherited asset, even a little soil removal is an asset, but reckless soil wastage is a serious error. Soils are the product of the atmosphere and its waters modifying the rock surface. When the atmospheric waters have aided the air in producing soil by rock decay, they may pass, on the one hand, into plants or back to the surface soil, and thence to the atmosphere by evaporation, or, on the other hand, they may pass on down to the ground waters, and thence into the streams. The alternative is to rush away as foul erosive floods on the surface, wasting soil and plant food, gullying the surface, choking the ravines, flooding the valleys, silting the pools, filling the reservoirs, sweeping out the dams, barring the streams and clogging the harbors. If it shall be found that all, or nearly all, the waters should go into the soil, and thence into the underdrainage, coming out slowly and steadily by seepage and by springs into the streams, clear and pure, these streams should present nearly ideal conditions for water food, for water power and for water navigation. The solution of the soil problem may therefore be, in large part, the solution of the whole complex of problems of which navigation is the last term. It may thus prove to be the key problem."

Loss by Surface Wastage

After calling attention to the very slow rate of soil production by the disintegration of rock, Doctor Chamberlin shows that "surface wastage is a serious menace to the retention of our soils under present modes of management. Historical evidence enforces this danger. In the Orient there are large tracts almost absolutely bare of soil, on which stand ruins which imply former flourishing populations. Other long-tilled lands bear similar testimony. It must be noted that more than loss of fertility is here menaced. It is the loss of the soil body itself, a loss almost beyond repair. When our soils are gone, we, too, must go, unless we shall find some way to feed on raw rock or its equivalent. The

immense tonnage of soil material carried out to sea annually by our rivers, even when allowance is made for laudable wash, and for material derived from the river channels, is an impressive warning of the danger of negligent practises. Nor is this all; the wash from one acre is often made the waste cover for another acre, or for several. Sometimes one's loss is another's gain, but all too frequently one's loss is another's disaster; and the one billion or more tons of richest soil matter annually carried into the sea by our rivers is the nation's loss."

Control of Water

This brings him to the question, "If the atmospheric waters may not run off the surface freely, without serious menace, where may they go and what may they do consistent with our welfare? The answer lies in a return to the study of the origin and internal work of soils."

Then, after explaining the origin of soils and the movements of water through them, he says:

"The problem of soil management thus appears to be a problem of proper balancings and adjustments.

"The key to the problem lies in due control of the water which falls on each acre. This water is an asset of great possible value. It should be looked upon as such. It should be computed by every acre owner as a possible value, saved if turned where it will do good, lost if permitted to run away, doubly lost if it carries also soil values and does destructive work below. Let us repeat the story of its laudable paths. A due portion of the rainfall should go through the soil to its bottom to promote soil formation there; a due portion of this should go into the underdrainage carrying away harmful matter; a due portion should go again up to the surface carrying solutions needed by the plants; a due portion should obviously go into the plants to nourish them; while still another portion should run off the surface carrying away a little of the leached soil matter. There are a multitude of important details in this complex of actions, but they must be passed by; the great features are clear and imperative.

"Experimental studies have shown that on the average within our domain crops can use to advantage all the rainfall during the growing season, and that in most cases crops are the better for all the stored supplies that can be carried over from the non-growing seasons. This greatly simplifies the general problem, for it justifies the conclusion—to which there are many local exceptions, of course—that the highest crop values will usually be secured when the soil is made to absorb as much of the rainfall and snowfall as practicable. In securing this maximum absorption and internal soil work, the run off, and hence the surface wash, will be reduced to a minimum. It has already been seen that the wash of even this inevitable minimum is likely to be still too great to keep the proper slow pace with soil generation when the surface has much slope. Except on very level ground and on lodgment surfaces there need be no solicitude about a sufficient removal of the soil surface. The practical problem then lies almost wholly in retaining and passing into the soil the maximum of the precipitation. Obviously this gives the minimum of wash to foul the streams, to spread over the bottom lands, to choke the reservoirs, to waste the water power, and to bar up the navigable rivers. The solution of the problem for the tiller of the soil essentially solves the whole train of problems."

Methods of Control

After reviewing Nature's methods and their lesson Doctor Chamberlin points out how man can co-operate with Nature as follows:

"Since a chief object is to cause the maximum of rainfall to be absorbed into the soil, it is obvious that all methods of culture and all crops that increase the granularity and porosity of the soil contribute to the end sought. Deep tillth to promote soil granulation, and deep-rooting plants to cause root tubes, are specific modes of great value."

"Artificial underdrainage, by preventing the water logging of the soil and by promoting its granulation, assists in absorption and transmission.

"Contour cultivation, by arresting the direct descent of the waters on the surface and distributing them along the slopes, when properly controlled aids absorption and limits surface wash. On the steeper slopes special devices may be used to supplement contour cultivation, such as strips of grass land, shrub land or trees alternating with zones of plow land. Reservoirs at the heads of ravines and at suitable heights in the ravines where surface wash is concentrated may be used to arrest storm floods, and if these are connected with lines of tile drain following contours on either hand, the concentrated waters will be redistributed and at the same time transferred from the surface to the subsoil.

"These and similar devices serve to limit the wash of the slopes, but the more radical and permanent remedies will, I think, be found in the development of values in trees, shrubs, vines and grasses to such an extent that they may be employed almost exclusively in clothing the steeper slopes where wash is most menacing, and where the usual modes of culture that give rise to bare surfaces during portions of the year can scarcely fail to involve a degree of wash which cannot be replaced by soil growth below. Is not the time at hand when trees, shrubs, vines, grasses, and combinations of these, may be so developed and extended in value and availability by modern profitable crops to monopolize all the areas where wash threatens the ultimate removal of the whole soil? By such extension of these crops, may not the bare-surface culture be so limited to relatively level lands as to cause in these, when intelligently handled, only that degree of surface loss which they can stand without menace to the perpetuity of the soil?"

Correct Methods of Soil Management Are Profitable

In conclusion Doctor Chamberlin takes up the question of profits as the critical one when it comes to the application of methods to prevent soil wastage, and says:

"But a critical question remains to be answered: Can such modes of soil management and crop selection be made to give reasonable profits? Before we can hope that the millions who till the soils will join effectively in a radical scheme of soil conservation, it must be made to appear that it will give some reasonable returns at every large stage of its progress; must pay, let us say, in the long run of a lifetime. We may fairly assume that intelligent people will be guided by the total returns of a lifetime, in lieu of beguilement by the ultra-quick returns of forced and wasteful cropping in total neglect of later results. It may be assumed that he who tills a farm from his twentieth to his sixtieth year will find more satisfaction in the summed profits of forty crops of increasing value enhanced by the higher value of his land at the end, even though the margin above cost be no greater than in the sum of forty crops of decreasing values with a debased value of the land at the end. Our practical problem is therefore to so improve processes, to so increase intelligent management, and to so exalt the point of view, that every step in the processes proposed shall give satisfactory returns for the labor involved. How far this is practicable just now I must leave to those whose technical knowledge in the practical art of tillage fits them to answer, but in any event it seems that this must become so in time; for if the loss of soils proceeds at the present rate and the number of inhabitants continues to increase as now, the value of the residue of tillable land which will remain after a few centuries will so depreciate as to force extreme measures for its conservation. The pitiable struggles of certain oriental peoples to retain and cultivate the scant remnants of once ample soils are both an example and a warning. Our escape from such a dire struggle should spring from a clearer fore-vision, a deeper insight, greater technical skill, and indefatigable industry."

Politics

By Alfred Henry Lewis

WRITING is so much like traveling that time is often saved by pushing down a panel of fence and going across lots. Without apology therefore, or tiresome elaboration of phrase, let us bend our brows to William Howard Taft. The Chicago ticket as handed down by the convention is "Taft and Sherman." The head of the ticket is the one great concern; Mr. Sherman, by the people, will be given no mighty scrutiny, whether for black or for white.

This Sherman immunity is by a plain law of nature. The public is like a dog—it is born incapable of chasing two rabbits at once. Also, a vice-president is unimportant save in event of an accident; and your public, ever the optimist, can seldom or never be brought to take the gloomy view. It will select a vice-president because the constitution says it must; but it will not think it needs him. He will take his place, like any other fifth wheel of government, without a very serious popular looking over.

* * *

With the head of the ticket, he who goes asking a four years' lease of the White House, the situation is vastly the other way about. Mr. Taft is already beneath the strong lens of popular interest. I should say, too, from what I know of the gentleman, as well as from what I read and hear, that he is likely to make a better president—if elected—than candidate. As a candidate Mr. Taft will have his limitations. What else should have been looked for? Mr. Taft was not so much selected as accepted by his party.

The public, commonly, has found its presidents either in the forum or on the battle field. Conventions, in seeking candidates, as a rule have been mere reflections of the popular choice. In the ready-made instance of Mr. Taft there was a departure from these laws. His name was not native to the convention mouth; it came not from the popular heart. Left to itself, without interference from Mr. Roosevelt, the Republican world would probably never have pitched upon Mr. Taft.

Not that this should prophesy a poverty of good presidential performance by Mr. Taft, in event of his election. A man might make a best president, and still be shoved wroth wise into the place. That, however, comes afterward. The present, which deals only with the campaign and candidate phase, is all that may now be considered.

* * *

No one more than myself admires Mr. Roosevelt; no one has more loyally yielded him support. For all that, he should have stood paws off in this business. Let the party—let the people select. It is not alone their duty, but their privilege. To shoulder them aside was as unnecessary as un-American. To be sure, the idea was that Mr. Roosevelt wanted some one to succeed him who would carry out his policies. It no less remains, however, that the theory of this republic bases itself not on what Mr. Roosevelt wants, not on what any individual, no matter how exalted, wants, but on what the public wants.

Moreover, there occurs no shadow of certainty that Mr. Taft, in event of his election, will execute those Roosevelt policies. Indeed, the almost sure presumption obtains that he will not. Agencies in the White House have never succeeded. Scanderbeg's sword needs Scanderbeg's arm. No man, however honest, however resolute, however wide between the eyes, is capable of taking another's program and working it triumphantly through. He will be a strong, clear, lucky individual who finds himself able to work through his own.

No; Mr. Roosevelt might better have kept his hands off this coil, not only for the good of the public and the party, but for his own good. That he should prove able to name his party's candidate was not particularly to his glory. No one doubted that ability who knows aught of the power that dwells within the White House hand. There are two hundred thousand office holders in this country, who live or perish by a presidential nod. These in salaries draw an annual two hundred million dollars. With such a corps of political followers behind him it may be taken as axiomatic that any president, when he will, can name his party's candidate to succeed himself. All of which makes a best of reasons why Mr. Roosevelt, remembering his Americanism and what he owes the public, should not have engaged himself upon the enterprise.

However wrong headed the public, it hardly requires a guardian. Moreover, recalling what precedent means to a posterity, it is far wiser that the public pick a worst possible president than that any single individual, acting arrogantly and of his own motion, should pick for it a best president. What American would not sooner fail with a republic than triumph with an autocracy?

* * *

You are not to suppose that I think the nation lies in any peril, or could possibly lie in any peril, at the hands of any future autocrat, howsoever malevolently strong. The nation is very big; the biggest individual is very little. Also, we are not racially of that material from which the footstools of tyrants are made. Take Caesar, Nero, Atilla, Charlemagne, Cromwell, Napoleon—I name sheep and goats—and roll them into one. Make that one as evil as Caligula, who bathed Rome in blood, and make him president. And yet, when compared with the whole country, he would come to just no more in his weakness and insignificance than does the last rat that skulks aboard a liner. He couldn't stop the ship; he couldn't sink the ship; he could neither abate its speed nor alter its direction. At worst and most, he might spoil a little of the cargo; and he would have to be stealthily careful to do it in the dark.

What does Mr. Taft promise? That is a query of importance. Since what was in the sapling is in the

As we stated in the last issue, Mr. Lewis stands on his own feet. We may agree with him on any point, and we may not.

We would be mighty glad to have you "talk back" to him whenever you feel like it. Write to him in our care, confining your reply to two hundred words. We shall hope to publish some of these replies from time to time.—THE EDITOR.

tree, let us begin at the beginning with Mr. Taft, and come with him down to a present day, when he stands upon a platform of many planks and asks for our votes.

Not, as I made clear in a former issue, that I attach importance to party platforms. Doubtless they have a value as candidates go climbing into office. They are, however, so much like the platforms of a street car that no one seems to have much use for them, once he's aboard. Commonly the parties themselves, like the traction companies, object to any one occupying the platform after the car's in motion. The order is to go inside and sit down. During my Washington years I held a seat in the press gallery throughout four congresses—two Republican, two Democratic. Not a law was passed, not a bill was introduced, to crystallize into statute any former platform utterance. No member of the dominant wing of either House or Senate so much as referred to his party platform unless prodded to it by members of the minority, taunting him with insincerity and lack of public faith.

* * *

William Howard Taft has lived fifty-three years, twenty-seven of which he has devoted to holding office. Mr. Taft has held many offices, all of them appointive. In politics, at the machine or managing end, one finds two sorts of men. There is the managing sort, the Warwicks; there is the candidate sort, being that raw material wherewith the Warwicks work. Mr. Taft is of the latter. From the moment he could cast a vote he has been a peg upon which the managing influences of his party were forever hanging office. Not but what those managing influences might have had an ax or two to grind. Mr. Taft's father was a party force, as able as any of his day to make or to mar.

Mr. Taft's friends are tireless to tell his modesty. In politics, as in commerce, modesty is more often a vice than a virtue. However, I should think the charge groundless in the case of Mr. Taft. Those twenty-seven years of successive and successful office holding—and presumably office seeking—could never be traceable to a violet—that modest flower.

Mr. Taft was born in Cincinnati. He is of good New England stock. The Taft blood in its ripening has been two hundred years in this country. This in no wise serves to injure it in the minds of narrowists like myself, who can't get over the feeling that, when all is in, the destinies of America are best guarded by Americans. What was it the wisely cautious Washington said at Yorktown? Mr. Taft's forebears have abode for two full centuries upon our side of the Atlantic. Several of them were present at such Revolutionary gatherings as Saratoga, and aided in sending Burgoyne back to England to play the fop, write bad farces, and fail at statesmanship, as he had failed at war.

* * *

For an education Mr. Taft, as boy and youth, went first to the public schools and then to Yale. In the latter university he was more widely known for his avoirdupoise than for his book acquirements. Let me here do justice to Mr. Taft. Brawn is a good thing; but one may have too much of a good thing. Six feet tall, with the thews of a bear, student Taft shone as a boxer, a wrestler, an irresistible force in football. And, albeit he read Latin as well as he boxed, was as good at Herodotus and Homer as he was at collar-and-elbow or catch-as-catch-can, and could do anything with Euclid he could do with a football, he for these acquirements was given no celebration. The niggardly world will not confer two wreaths. Student Taft was granted fame merely as a gladiator. This was calculated to create a wrong impression as to student Taft, who, as a matter of college truth, worked as hard and stood as high in the classroom as in the gymnasium.

Graduation day; and student Taft, having boxed his last bout, wrestled his last fall and kicked his last pig-skin, was given his diploma and its attendant B.A. With that he went home to Cincinnati, and proceeded to take up the white man's burden, in its more serious aspects, by whipping an editor who had printed ill of the elder Taft, his father.

* * *

Now upon the threshold of his career, Mr. Taft entered the paternal law office, and began to gnaw his slow way into "Blackstone." Also, he worked for six dollars a week on a paper.

Completing his studies, he is called to the bar. Now sets in that storm, that blizzard, of office holding.

As a cub of an undoubted party lion, Mr. Taft was of such early importance, that before he had shed his milk teeth as a lawyer practising at the bar, he was invited to the post of assistant county attorney. Subsequently, by appointment of Mr. Arthur, he became collector of revenue for his district—a revenue which amounted to twelve millions a year. Next, a vacancy existing, Governor Foraker named him judge of the supreme court of Cincinnati.

At the end of his term as such judge Mr. Taft asked election at the hands of the people, and was confirmed in the place by a majority of five thousand. This is the one instance when Mr. Taft ran for office.

Mr. Harrison, in the White House, called Mr. Taft to Washington as solicitor general. It was during Mr. Taft's Washington stay as solicitor general that he

made the lucky acquaintance of Mr. Roosevelt. The pair fell together like a shock of oats. While on this bench of the nation's circuit court Mr. Taft dealt a blow to the Trusts in the Addystone Pipe Company decision; and sundry blows to the laborites in an injunction against the Typographical Union at war with a Covington paper; another against Chief Arthur of the Locomotive Engineers on the brink of a sympathy strike, and a jail sentence of six months against an obstreperous person named Phelan, haled before him for contempt as incident to the Debs-Pullman upheaval of 1894.

It was Mr. McKinley—at a hint from Mr. Elihu Root—who sent Mr. Taft to the Philippines. Had Mr. Taft been in control at the close of the Spanish War he would have cast the Philippines adrift. He wouldn't have kept them, for the same reason of expensive nuisance he wouldn't have kept a St. Bernard dog. For that earlier reason of no sympathy, one would not have thought him the man to teach Filipinos republicanism, and engender a saddle-colored admiration for the Stars and Stripes. And yet the Taft selection proved a happy one. He set those benighted islanders upon their political and commercial legs. He gave them good American laws. He instituted railroads, telegraphs, telephones, wagon roads, schools. To-day five thousand Filipino teachers, if not birching, are bamboozling the three *Rs* into more than four hundred thousand wheat-hued young ones. Also, these grateful creatures canonize Mr. Taft as "Santo Taft."

* * *

The Friars were on the political bridge in the Philippines. This condition could not continue. Mr. Taft paid a visit to the Pope. His Holiness was brought to see the point. By Vatican suggestion the Friars descended from the bridge of state, and sold their possessions—four hundred and ten thousand acres—to the Filipino public for \$6,934,427. Having cleaned up the business with the Pope, Mr. Taft returned to the Philippines, where the natives danced violently in his honor. While Mr. Taft was in Manila, Mr. Roosevelt cabled him to come home and take a place on the supreme bench. Mr. Taft declined. While on the subject of declinations, it is as well to notice that Mr. Taft declined the presidency of Yale. Returning from the Philippines, Mr. Taft accepted the portfolio of war.

* * *

Considered personally, Mr. Taft is big, friendly, wise, faithful, obstinate, unselfish. He gives forth an unflagging impression of honesty. He owns a temper, and can rage on right occasion. Beyond these, Mr. Taft is bluff, frank, without pose, nowise in love with himself, and lacks in selfishness and an intriguing genius for design. Big rather than great, mentally, morally, physically, he wants in every element of the mollycoddle. There is a sense of humor embedded in the Taftian bulk. He can tell a joke, and see a joke; and he can laugh like a storm. Also, his mind is as clean as a woman's.

There has been a deal of the hay-scales school of humor indulged in concerning the extravagant fatness of Mr. Taft. These jests are, to put it right, misleading. Not that Mr. Taft would remind one of an antelope; still his bulk—the bulk of the elephant—is the bulk of brawn and bones. It is not merely adipose, it is muscle as well.

Mr. Taft's face is his best indorsement. The forehead is wide, round, thoughtful; the eyes are blue and friendly; the brown hair is bravely defensive against encroaching baldness; the nose confidently aggressive; the jaw suggestive of a stubborn force; the mouth capable equally of gravity and mirth. The Taft mustache could be dispensed with and not spoil the picture.

* * *

Should Mr. Taft be chosen President, those who look for him to parallel the strenuous administration of Mr. Roosevelt will meet with disappointment. There is no resemblance between the two. Mr. Roosevelt is a raider, a cavalryman; he is for charging an enemy, and deciding the war in downright saber-slashing fashion. Mr. Taft's genius is for the defensive; he is best behind walls and ramparts. Go read your Romans. Mr. Taft is a Fabius, Mr. Roosevelt a Scipio.

Assuming Mr. Taft in the White House, he will give you a McKinley administration with the Hanna element left out. Will this satisfy Mr. Roosevelt? I will tell you what I think. Mr. Roosevelt and Mr. Taft will much better agree at the beginning of Mr. Taft's administration than at the close—always assuming a Taftian triumph at the November polls.

The two will go apart. The difference will not mean that Mr. Taft has been either ungrateful or treacherous, or Mr. Roosevelt overarrogant in his demands. "President Taft"—and in all honesty, too—will be a vastly different individual from "Candidate Taft." Now he is the clay; Mr. Roosevelt is the potter. Now he has hopes; then he will have fears. Now he possesses ambitions; then he will face responsibilities.

Some fine day, should Mr. Taft be in the White House, Mr. Roosevelt—ardent, not keen as to what sure changes ever attend upon "before" and "after"—will enter a protest or prefer a request. "President Taft"—doing his friendly best—will not be able to entertain the one or grant the other. Mr. Roosevelt—doing his friendly best—will not be able to see why. Both men are fine enough to be sensitive, young enough to be angry. And so, in mutual misunderstanding our Damon and Pythias of politics, our modern Jonathan and David, will separate; and what places in politics have known them in their intimacies, their co-partnerships, will so know them no more forever.

THE PROFESSOR'S BABY

A Story by L. Ten Broeck



ANNIE TRYON's pretty face was wreathed with smiles that morning, as she prepared the baby and herself for their trip to New York. It was all too good to be true. Elijah, her husband, the grave and learned professor of ethnology at the university, had consented also to take a day off from his endless gropings after the lost races of Mexico and Yucatan. He would leave her at a department store, while he rummaged among the book shops and libraries, and then would meet her at the Twenty-third Street ferry house in time for the five-o'clock train.

This would give Annie the chance to see Imogen Kale, her old school friend from the West, who was now visiting her aunt on Seventy-ninth Street, and whom she had not seen since they exchanged eternal vows at commencement. Poor Imogen! Why had Fate dealt so unequally with them? Why should she be burdened with a secret sorrow, while Annie was so blessed, even if the Professor was at times abstracted and absent-minded. Then there was the baby. Would not Imogen forget the pangs of love in the joys of adoring him?

It was pleasant on the train, watching the pretty suburban towns, as closely joined as beads on a necklace: but Annie could do that when she went into town alone, as she often did. She wanted to talk to her husband; and talk she did so continuously that there really wasn't a chance for him to slip in a word of reply.

"Goo," cried the baby most unexpectedly.

"This same Indo-European root, 'Gou,'" the Professor remarked, "is found symbolized in the ideo-graphic inscriptions of the Toltecs, who, as you will recall, migrated anteriorily to the Aztecs—"

And then it was that Mrs. Tryon realized that her husband was removed several thousands of miles and ages of time from the subjects of her interest.

"You don't pay the slightest attention to what I say, Elijah," she pouted. "I might just as well be taking a holiday with a mummy. The idea of mixing up our child's innocent prattle with a lot of heathenish jargon."

Whereupon, the Professor, being a devoted husband and father, grew remorseful, and promised never to do so again.

The Absent-Minded Professor

These protestations came back to him after he bade his family adieu in the great store and started out on his own peculiar line of pleasure.

What were Annie's last words? "Now, don't forget, Elijah," she had cautioned solemnly, "to be at the ferry house in ample time for the train. Be there early—you are so forgetful—above all things be there early."

Yes, this warning was well deserved: it should have his implicit obedience. How dreadful it would be, if through his strange habit of abstraction, he should again mortify and distress his good little wife.

The Professor tugged nervously at his watch. He glanced hastily at its back. Then he took the first car to the ferry house, where he planted himself with zeal of a crusader, on the bench by the nearest window to the left, that being the tryst agreed.

Two hours passed. The Professor still held his post, absorbed in erudite matters several thousands of miles and ages of time distant, and oblivious of the throng that swelled and lessened, and then swelled again, as if moved by the machinery of some vast clock. Then a dark, withered woman, foreign of appearance and dress, darted up to him with a baby in her arms.

"Kind sir, please hold my little one while I buy a ticket," she said, and was gone before the Professor realized that she had come and what she had left.

"Goo," cried the baby confidingly.

And in the contemplation of this renewed evidence of the similarity of primeval speech the Professor again lost all count of the flight of time.

A Friendship Renewed

Imogen Kale was unfeignedly delighted to see her old friend, and duly enraptured over the baby. But soon the shadows began to gather on a face which in the school days of long ago had been as sunny as Annie's.

"Now, Imogen," said Mrs. Tryon, quick to note the change, "we must have an old-fashioned talk. I'm not going to let melancholy prey on the damask of your cheek. Let Nancy, that bright-faced maid of yours, walk up and down on the sidewalk with the baby—the precious is so used to the air—and then you shall have my undivided attention."

So it was arranged. After the baby had been kissed and the maid warned, the two friends sat side by side and hand in hand in girlish confidence.

"It surely can't be so hopeless as that," cried Annie.

"How could it be more hopeless?" sighed Imogen. "Not only did father forbid my seeing or hearing from Vincent again until he had exonerated himself, but almost immediately Vincent went away. I know no more where he is than he knows where I am. He may be dead, as I wish I were—"

"Hush," commanded Annie. "From what you have written me of Vincent Dare, I feel sure he has taken the right, the only course. We know he is innocent;

but appearances were against him—your father, like the townpeople, was justified in asking for proof of it. What, then, should a manly young fellow do, except go forth like a knight, without fear or reproach, to overthrow evil and bring back the laurels of truth. Tell me again, Imogen, all about it. Things often come to one in talking that are passed by in letter writing. Who knows but between us we may find a weak mesh in the net cast about our lion."

Imogen's Love Story

So Imogen told again the story of the young lawyer, Vincent Dare, who had come, all unknown, to her Western home to win the esteem of the people and her own love. She told of the dreadful night, just after their engagement was announced, when he came to her, all shaken with the news of the mysterious loss of trust funds from the safe in his office. How he had sold for his client, old Madame Jaurez, her interest in the famous Zimenez Silver Mine, and receiving the price in cash too late to deposit it in the bank. How he had returned to the office, after a hasty supper, to watch there through the night. How the safe was apparently locked as when he left it, yet when he had unlocked it in his anxiety, the money was not there.

She told how even then Vincent was dispirited by the contemptuous indifference with which the police had treated the loss, and how steadily, day by day, as if under some secret inspiration, distrust had spread, until it was openly said that if Dare didn't know where the money was, nobody did. Then, in despair from suspicion and slight, he had left the town.

"And do you know, Annie," concluded Imogen, "the only person there who professed a belief in poor Vincent's innocence was old Madame Jaurez herself. She sent for me, a few weeks before her death, and told the strangest story of family feud—how her half-sister, Donna Lois Spirito, living in Spain, and filled with all the intense passions of that romantic land, had vowed that none of the wealth that had originally come from the Spiritos should be diverted from the Spirito line. It was just like Lois, she said, beset through years of brooding, with a fixed idea, to plot to seize the proceeds from the sale of the Zimenez Mine."

"Incredible!" exclaimed Annie.

"Incredible, yes, but not half as incredible as the sequel. It came out naturally in our talk that my mother's name was Spirito—you remember the girls at school used to call me 'the little Spaniard.' The Madame figured it out that I was a descendant in the direct line of her half-sister's family; and when she died, she willed me the stolen money—one hundred thousand dollars—if it was ever recovered. This only served to infuriate father the more—Heavens, Nancy, whatever is the matter?"

The Baby is Stolen

"Everything is the matter! Help, murder, help!" screamed the little maid, darting frantically about the room. "The baby is gone—stolen. I left it but a moment on the stoop, while I went into the kitchen for a drink. There had been a foreigner speaking to me, a black, dried-up woman, queerly dressed. I believe she stole the darling—the wretch—"

"Stop—let me think," gasped Annie with sublime restraint. "Yes, that is the description. Such a woman stood by the same counter in the store when I said good-bye to Elijah. She may have overheard every word—I have followed me here. Quick, quick, the telephone. We'll notify the police. It may not be too late."

Further Adventures of the Professor

Within the ferry house the tide of travel ebbed and flowed, to ebb and flow again, under the mighty impulse of time. But in the corner by the first window to the left the Professor still sat, as heedless in his meditation of tumult or quiet as the baby asleep in his arms.

The boat, bearing passengers from the Western Limited, came into the slip with an important bang. A thick-set man with the collar of his coat turned up and the flap of his cap turned down over his unshaven face leaped out from among the horses and hurried through the waiting room. As if alarmed by the press behind, he turned abruptly to the left and accosted the Professor.

"Say, pard," he began persuasively, "do a poor cove a favor, will you? Just let me sit down in the corner by you and hold the baby for a moment or so. I'll tell you why when the crowd goes by."

"Eh? What's that? The baby? What baby?" exclaimed the blinking Professor. "Oh, to be sure—I was oblivious. I wonder where that woman has gone? No, my man, without a fuller explanation I cannot surrender the infant in my charge to a stranger, emulating thereby the baseness of its unnatural mother, especially as the little one seems to show a strong repugnance to you."

And indeed the baby, with a cry of terror, was clinging to the Professor as if assured of protection.

"There's no time for funny business," threatened the ruffian. "Gimme the brat or—"

At this instant a fine, manly young fellow, rushing from the boat in evident search, and attracted by the raised voices, sprang upon the thick-set man, shaking him like a rat.

"Aha," he shouted triumphantly, "I have got you at last after a thousand-mile chase."

"Lemme be," mumbled the man, cowering behind his uplifted arm. "You orter be ashamed to pitch onto a decent laborer on his way home from work."

"What's this rumpus about?" demanded a sergeant of police, pressing forward, with a patrolman at his heels. "Do you want me to pull you all in—"

"I give this man into custody, officer, on the charge of burglary," said the manly young fellow. "He is that notorious cracksman, Bill Slope. My name is Vincent Dare, and I'm a lawyer from the West with plenty of references. Three months ago a large sum of money was stolen from my office under circumstances that showed that the burglar must have been so expert of ear and hand as to be able to work out the combination of a safe. I learned that there was only one rascal at large having these qualifications—namely, this Bill Slope—and I've been after him ever since."

"It is all a gashly mistake, s'help me," protested the thick-set man. "I was a-settin' here quiet, a-waitin' for the boat, and a-lettin' this kind gent play with my baby—"

"That is not true, officer," interposed the Professor. "On the contrary, this man, whom I have never seen before, was abusing me because I would not let him take the infant, for the purpose, as I now believe, of hiding his face behind it."

"Then this is your child, sir?" asked the sergeant.

"No; some one gave the infant to me but a moment since to hold."

"What did I tell you?" cried the thick-set man.

"But a moment since," repeated the ticket chopper from the door. "That ministerial chap has been dozing there with the baby for the last four hours."

"Enough," decided the sergeant sharply. "There's a general alarm out for a stolen child. I'll have to take you all to the station. McManus, the patrol wagon, quick."

Revelations at the Station House

Vincent Dare had scarcely finished with his evidence tending to show that the accused was Bill Slope, who at the instigation of some unknown employer had burglarized his office, when Annie Tryon and Imogen Kale hastily entered the station-house office.

With a cry of delight Annie caught the baby from the Professor's arms, and hugged it to her breast, fondling it with a thousand kisses and endearing terms.

"Mother's precious," she cooed. "Safe, safe, all this dreadful time, in papa's care. Oh, God be thanked."

"Mother's precious, papa's care," murmured the Professor, ruffling his hair. "I am astounded. I am dumfounded."

Imogen Kale was as intense, if not so emotional, as her friend. She hurried over to Vincent's side.

"Vincent, dear Vincent," she whispered, "you don't know how happy I am to see you."

"It is all right now, dear," he assured her.

"It has always been all right," she declared proudly.

"I shall hold this man, as a matter of course, for examination," decided the police captain. "If he is Bill Slope, there must be a dozen detectives at headquarters who can identify him at a glance. But about this baby now. The story that came over the wire was that it had been kidnaped by some foreign woman; but now it seems its father had it all the time. How am I going to straighten out the affair when I make my report?"

Luckily for the Professor's composure of mind, his good wife, who had been engaged, as mothers will after an absence, in adjusting the baby's somewhat tousled clothing, now afforded relief by pressing forward in the greatest excitement.

"Look, Mr. Captain, look, Mr. Judge," she cried, "at what I found pinned to the baby's skirts."

The captain took the thick sealed packet and examined it judiciously.

It was indorsed in a fine feminine hand as follows:

"Mrs. Tryon, please give this to your friend, Imogen Kale, whose mother was a Spirito. It belongs to her."

He cut the string, unfolded the thick paper, and deftly counted the crisp bills enclosed. "One hundred one-thousand-dollar bills," he went on quietly. "Miss Kale, I congratulate you on coming into a fortune."

"The same amount," said Vincent Dare, quickly examining, "that was taken from my office—yes, and the same bills—I have a memorandum of their numbers."

"Kick me, some one, please," moaned the thick-set man. "That old woman told me that the package she wanted me to kip was nothin' more'n musty family papers."

And thereafter there was little doubt of his identity or of that of the dark, withered woman of foreign appearance and dress.

But the Professor's hour of reckoning was now at hand.

"To think that you didn't know your own child," said Annie reproachfully.

"'Tis a wise father who does that, my dear," replied the Professor whimsically, again ruffling his hair; "and I am a foolish old man—foolish in all things save my love for you."

"Goo," cried the baby, as if in approval; and "Goo" cried they all.

Helps to Lighten Housework

Fresh Water for Young Chicks

KEEPING a supply of pure, clean water for young chicks is a problem that all poultry raisers must meet. One woman who has been very successful in raising chickens advances the following simple solution of the difficulty:

With a nail punch holes around the open end of a tomato can. These holes should be about half an inch from the edge of the can. Fill the can with water, and holding a saucer over the top, as in Fig. A, quickly invert.

There will always be half an inch of water in the saucer until the can is empty. If the drinking water be regulated in this way, the young chicks cannot get into it nor upset it, as they can when the water is put into an open dish, which is the general custom.

A Home-Made Dressing Table and Shirt-Waist Box

THE trouble with the ordinary shirt-waist boxes is that, while pretty to look at, with their dainty cretonne coverings, they necessitate piling the waists one on top of another, so that those at the bottom are invariably crumpled, besides being inconvenient to get at. To one in need of a receptacle for waists, and a dressing table as well, the following successful combination may appeal.

First line two soap boxes with plain bleached muslin, and stand them on end, side by side. A board nailed across the tops of the boxes will hold them firmly in place, and a second board is to be fastened about six inches above the first by means of wooden end pieces. This forms the table top, while the space between makes a convenient receptacle for glove and handkerchief boxes, veil case and other toilet accessories.

Next have the tinsmith cut two tongue-shaped pieces of zinc, six inches long, which are to be nailed by the base to the upper front edge of each box, just in the center. Two pieces of broomstick are then sawed off just long

enough to reach from the front to the back, one end of each being nailed to one of the zinc tongues, and the other to the back of the box.

A valance of cretonne, reaching to the floor, should be gathered and tacked in place with brass-headed upholstery nails.

The upper board is then covered smoothly, and finished with a flounce which just covers the heading of the valance. An inexpensive mirror hung above the boxes completes the dressing-table feature, while each of the broomstick rods within accommodates half a dozen wire waist hangers, which keep silk and lingerie waists in perfect condition and readily accessible.

To Make Sewing Easy

A SMALL cake of white soap kept in the machine drawer is a great saver of machine needles and makes sewing easier. When a thick place, such as the crossing of two seams, is reached in stitching, rub the material with the soap, and the needle will pass through it as if by magic, without breaking or even bending. This treatment is particularly valuable when one is stitching sheer lawns or mousselines and using a very fine needle.

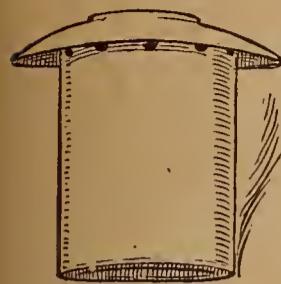


Fig. A



Fig. B

Time Saving in the Attic

IF EACH trunk and packing box stored in the attic is tagged with a complete list of its contents, much time will subsequently be saved that would otherwise be wasted in hunting. Use large-sized manila shipping tags and write the lists thereon in good black ink.

We have all seen garments intended for "making over," or hats whose trimmings would answer for a second use, permitted, because of their bulky size, to remain hanging in closets or thrown down in tumbled heaps until they were so creased, faded and dust begrimed as to be valueless. The best way to handle such articles is to rip off the trimmings, clean and freshen all which are worth preserving, and pack them in stout paper bags, each plainly labeled, which can be suspended from the attic rafters.

Rip up the garments, cut out the good portions, sponge, press, and roll the pieces on mailing tubes. The latter will prevent their becoming creased, and in the case of silks prevent cracking. The time thus spent will be well repaid when the time for remaking arrives.

Card System for Filing Recipes

A NEW use for the card-filing system is the keeping of recipes in an orderly and convenient fashion. Use three-by-five cards, writing one recipe on each, and file them in a small box or a regular card cabinet under various headings, such as Soups, Bread, Cake, Pastry, etc. When a card is wanted it can be removed from the cabinet, placed in an ordinary metal clip, such as business men use for holding papers, and hung in plain view above the kitchen table. This prevents it from getting soiled or lost, and after using, it can be returned to the file. The advantages of this method over the customary one of writing recipes in a bound volume are too obvious to require description.

Frame for Weaving Cushion Cover

NOR all of us have enough pretty silk scraps to weave the portières that are so popular now, but almost any one can find enough silk to make a sofa-pillow cover. These covers are exceedingly pretty and quite unusual.

First make a light frame of lath or other narrow boards a little larger than the cover is to be—eighteen inches will be large enough. Into the top and bottom of the frame drive small nails about half an inch apart.

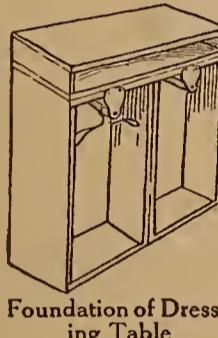
Wind the warp back and forth between the nails from one side to the opposite one. Gray linen is good for the warp, or the silk rags may be used for both warp and filling. Fasten one end of the rag at the upper right-hand corner of the frame.

Get a long stick,

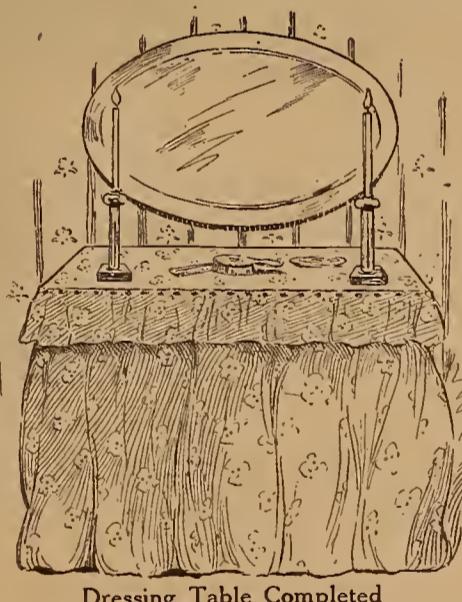
either flat or round, and sandpaper it very smooth. Cut a little slit in one end, and draw the loose end of the rag into it. Then it is ready to be woven across the warp, the stick serving as a needle, and making it easy to go over one thread and under the next, just as in darning. Draw up the rag tight

each time it is woven across, and as each row is put in push it up closely against the preceding one. The rags must be sewn together as one goes along, as it is not convenient to work with a rag more than two or three yards in length.

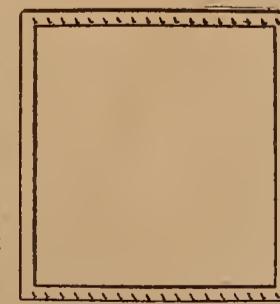
Both sides may be woven, or a back put on of other material. The sides, of course, are selvage, and the ends are finished by cutting the warp from the nails and tying the ends by twos, then stitching across on the sewing machine. A heavy silk cord makes an appropriate finish.



Foundation of Dressing Table



Dressing Table Completed



Frame for Weaving

Singer Talks

10. The Difference Between Poor and Good Cabinet Work

¶ It is a fact not generally known that very few sewing machine manufacturers produce their own cabinet work. This is a distinct industry in itself.

¶ The Singer Company owns and operates the largest and best equipped factory in the world, exclusively devoted to the production of the highest grade sewing machine cabinet work.

¶ Only the finest woods procurable are used. To insure the proper selection of these woods, a corps of expert wood rangers is employed, whose duty it is to purchase individual trees, the grain and growth of which entitle them to use in Singer cabinet work.

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WRITE TODAY FOR STOVE CATALOG NO. 183.
KALAMAZOO STOVE COMPANY, Mrs., Kalamazoo, Mich.



A Special Summer Fashion Supplement to the Madison Square Pattern Catalogue

has just been published. It consists of eight pages entirely filled with the very latest designs for summer clothes. Among them are suits, skirts, shirt waists, negligee gowns, morning dresses, afternoon gowns and evening dresses, as well as underwear, lingerie and bathing suits.

This splendid summer fashion supplement is included free now in every Madison Square Pattern Catalogue. Send two 2-cent stamps to-day and we will send you both the Fashion Catalogue and the Summer Supplement by return mail.

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Saving a cent on a paper of pins and buying three papers, is poor economy; when one paper of

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It is to your advantage to mention Farm and Fireside in writing to advertisers. Farm and Fireside folks get the very best attention.

You Can Have This Silk Fan



It will not cost you a cent, either, and it is without doubt one of the handsomest gifts we have ever offered the readers of FARM AND FIRESIDE. Silk fans are mighty fine things to have, because they not only last for years, but they are perfectly exquisite, especially when hand painted like this fan.

Description:—This white silk fan is beautifully decorated with small silver spangles and hand-painted designs. It is edged on top with delicate lace and the base of the fan is trimmed with purling braid. The fan is mounted on decorated white-enamored sticks eight inches long. This fan is

Really Beautiful

You can have it sent prepaid right to your door if you will send us only five subscriptions to FARM AND FIRESIDE at 25 cents each. Don't delay, but be the first one in your town to own one of these exquisite fans. Remember, it takes only five subscriptions, and send them all to

FARM AND FIRESIDE
SPRINGFIELD, OHIO



The Household

Cooling Summer Beverages

ON WARM summer days, when a glass of water does not have as refreshing an effect as may be desired, try one of the following beverages.

HOME-MADE SODA WATER—Make a syrup with three pounds of sugar, one and one half pints of molasses, one fourth of a pound of tartaric acid, one half ounce of sassafras and two quarts of boiling water. If bottled, well corked, and kept in a cool, dark place, this syrup will keep for a long time. To make a refreshing drink, stir two tablespoonsfuls of the syrup and one half teaspoonful of soda in a glassful of cool water.

LEMON VINEGAR—Keep a jar of vinegar, into which may be put the lemon peel not used in cooking. A little of this in a glassful of sweetened water is cooling.

RASPBERRY VINEGAR OR SHRUB—Put three pints of raspberries in an earthen

The Possibilities of a Wood Shed

A GLANCE at the illustration below will show that making a comfortable, habitable little corner in a disused wood shed is not at all so impossible as it may sound. The first step toward effecting the transformation is a thorough cleansing of the interior. If it is desired, the walls may be painted or stained, but this is not always essential. Shelves for books or ornaments are next to be considered. These are made very simply by fastening a board cut to the right length over a couple of wooden braces made as indicated in the illustration. The shelves should be painted or stained to match the walls.

A couch of some kind is quite necessary to the comfort of this little retreat. It may be a home-made one built into the wall and covered with a mattress, or an ordinary cot. Denim or any other heavy



A Transformed Wood Shed

JELLY WATER—This beverage is equally refreshing when made with currant, crab-apple or barberry jelly. Add one half cupful of cold water to two tablespoonfuls of beaten jelly and lemon juice to taste.

HARVEST DRINK—A very refreshing drink may be made by mixing

one quart of water, three tablespoonfuls of sugar, one tablespoonful of sifted ginger and one half pint of vinegar.

FRUIT PUNCH—Boil together for twenty minutes one quart of water, two cupfuls of sugar and two cupfuls of chopped pineapple. When cool, add one half cupful of lemon juice and one cupful of orange juice. Strain this mixture and dilute it with ice water before serving. This is a particularly acceptable beverage for afternoon and evening parties.

The Medicinal Value of Vinegar

LONG ago the value of vinegar in easing bruises and preventing discoloration was recognized. As a proof of this, witness the old nursery rhyme:

He went to bed to mend his head
With vinegar and brown paper.

But our grandmothers put pure cider vinegar to many other medicinal uses besides the above. They knew that for feverishness a cooling and refreshing drink may be made by putting fifteen drops of vinegar in a glassful of sugar water. As a substitute for alcohol in bathing fever patients or those affected with night sweats, vinegar is very effective.

Bathing the forehead and wrists with vinegar will bring one out of a fainting fit, and vinegar compresses are wonderfully efficacious in curing headaches.

In the case of sore throat and that inclination to cough which is caused by a falling palate, an excellent gargle may be made by adding one tablespoonful of vinegar to a glassful of water containing one teaspoonful of salt and a pinch of cayenne pepper.

A wineglassful of vinegar with one teaspoonful of salt added, given four times a day in teaspoonful doses, will cure diarrhea; and as an antidote for poisoning by alkaloids and lye, and all narcotics, it is highly recommended.

Vinegar sprinkled on a hot shovel sweetens the stale sick-room air and proves an excellent disinfectant.

materials in a dark shade of green make acceptable covers for the couch and its pillows. A bowl or vase of flowers brightens the room and adds a very lovely touch. A hanging basket in the doorway is also effective. Near the couch there should be a low table for books and papers or a tea set.

This little corner arranged to suit the taste of its owner ought to be a comfortable spot for reading, sewing or resting.

Suggestions for the Summer Girl

ALMOST every girl or woman has at some time of her life suffered great vexation of spirit at finding her hair all limp and straight when it seemed to her for every obvious reason it should have retained its charming waves or curls. A simple and entirely satisfactory curling fluid may be easily made at home, and far from being injurious, will prove a fine tonic to the hair roots if not used in sufficient quantities to keep the hair wet too long. Mix one half cupful of strong cold tea with one fourth as much cologne water and four cloves. Bottle, and cork. Just dampen the hair with this before putting it into the wavers or curlers, and leave all night or until the hair has had time to become entirely dry. Since this hair curler does not keep particularly well, it is better to make it in no larger quantities than those mentioned.

Save all your remnants of white soap to use in washing delicate embroideries and muslins which will not stand having soap rubbed directly upon them. When you have about one fourth of a pound of these bits collected, put them over the fire with one pint of water, and let simmer until entirely dissolved. Pour the solution into a jar, and when it is almost cold, stir into it vigorously one half teaspoonful of liquid ammonia for each pint of the soap liquid. When quite cold this will be a soft jelly. In using it, add just enough to warm water to make a good lather, and wash the delicate colored articles in it as quickly as possible, then rinse very thoroughly and dry quickly.

Excellent Vegetable Dishes

CORN IN TOMATO CASES—Choose large, firm, smooth tomatoes, allowing one for each person. Cut a piece out of the stem end of each, and with a spoon scoop out the pulp and seeds, then turn down, and drain for a few moments. Sprinkle each of these tomato cases with a little salt and pepper. Cut and shave some green corn from the ear, and add two or three chopped mushrooms (these may be omitted, if preferred), season with salt and pepper to taste. Fill the tomato cases with this mixture, put one half teaspoonful of butter on each tomato, place side by side in a buttered pan, put in the oven, and bake for thirty minutes.

TOMATOES STUFFED WITH CRESS—Peel nice, ripe tomatoes, and set them on ice for two hours; then cut a slice from the stem end and carefully take out the seeds without breaking the tomato. Put back on ice or in a cool place until ready to serve. Wash the cress, and cut it up with a sharp knife. Moisten it with a French dressing to which has been added one teaspoonful of onion juice. After carefully mixing, put it into the tomatoes and serve each tomato on a lettuce leaf. This is a dainty and cooling salad for a summer luncheon or tea.

BEET-AND-BEAN SALAD—Boil round red beets, then remove the skin, scoop out the inside of each, and flatten the bottom so that they will stand upright. Cook some lima beans, and when done, dress with vinegar, salt and pepper, pouring some of the dressing over the beets, also. Garnish with celery or parsley.

STUFFED SQUASH—Clean very small, thin-skinned summer squashes. Do not pare, but boil in salted water until tender. Drain, and set aside until cool, then cut off the top of each squash, and scoop out the seeds. Run some cold-boiled meat through the meat chopper, and season well with salt, pepper, butter and a little chopped parsley. Fill the center of the squashes with this meat. Arrange in a bake dish, half cover with a sauce, sprinkle with bread crumbs, and bake for about thirty minutes in a moderate oven.

Simple Remedies for Tired Feet

FOR the man who has been in the fields or for the housewife who has been on her feet all day there is no simpler or more comforting foot ease than a tubful of hot—not warm—water into which has been thrown a large handful of salt. If the feet are bathed in warm water without salt they should be carefully dried, then rubbed with spirits of camphor, which should be allowed to dry on.

If it is desired, after this treatment the feet may be rubbed with cold cream, which has a particularly soothing effect and dissipates callous spots by softening them. The cream should be rubbed in very thoroughly between the toes and on the soles and insteps.

Great care should be taken of perspiring feet, as their condition grows worse with neglect. They should be bathed every night in hot water in which powdered alum has been dissolved in the proportion of an ounce of alum to a tubful of water. An excellent mixture with which to paint the feet after they have been bathed is made of two ounces of glycerine, six ounces of perchloride of iron and twenty drops of essence of neroli. This should be applied carefully with a little brush, great care being taken to cover all creases and folds in the skin. This application is to be followed at once by a dusting with good talcum powder or one made of two and one half grains of burnt alum, one and one fourth grains of salicylic acid, seven and one half grains of starch and twenty-five grains of violet talcum powder.

Miss Gould's Fashion Page

Fashions in Waists and Colors

HERE is one item in her wardrobe that no woman ought to worry about this year—that is, her blouses, her shirt waists, as she is apt to call them. For no matter what her age or her figure, she can readily find in the new designs for blouses many models exactly suited to her individual need.

If she wishes to add breadth to her shoulders, she can make her blouses so that she will look broad shouldered and yet have the consciousness that she is in the height of style, for broad-shouldered effects are all the vogue, sometimes produced by plaits extending over the shoulders, and then again by a scarf-like drapery so arranged that it widens the shoulder line.

While if, on the other hand, she has a fondness for the long, drooping shoulder, she can still find many designs which will carry out this effect.

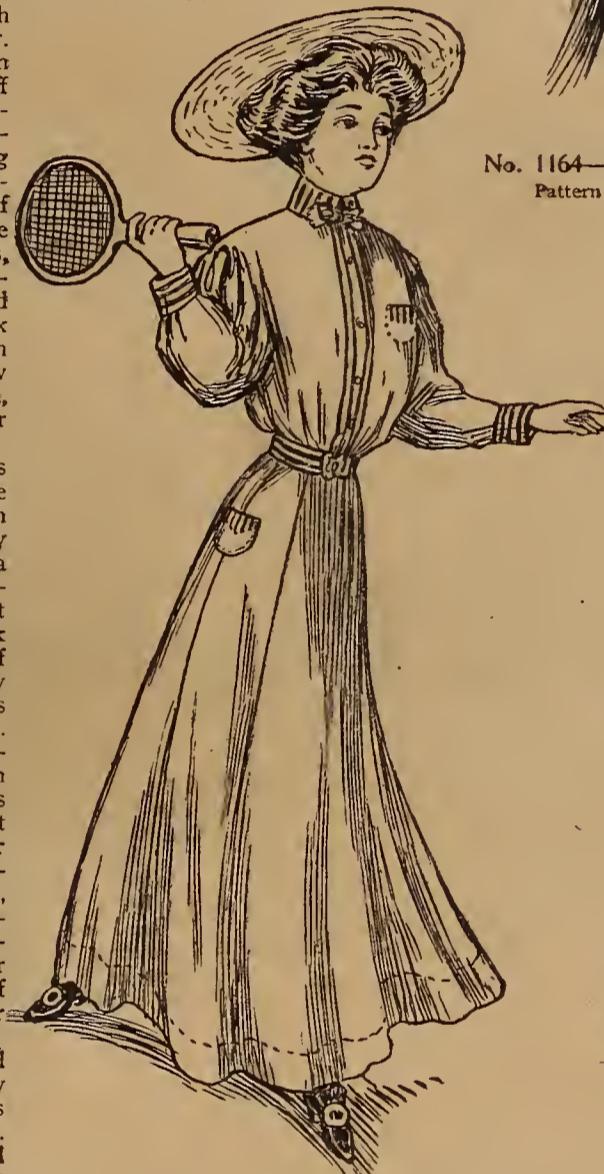
A very new idea for a summer shirt waist is the one illustrated on this page in No. 1164, Waist With Buttoned Plastron. A feature of this waist is the turn-down collar. These cool and comfortable turn-down collars are known as Dutch collars and are very much the fashion this summer. They can be bought in the shops made of stiff linen and also in fine lingerie effects. Very narrow neckties are among the novelties of the moment, about five eighths of an inch in width. These ties come in many colors, but are extremely effective in black finished with gold or black silk tassels. With the Dutch collars these very narrow little neckties are worn, tied in a four-in-hand or once-over fashion.

Very plain shirt waists are especially good style this summer, and when they are made severely plain it is well to add a pocket. It is a very delightful fashion fact that pockets are coming back into style again, many of the skirts for every-day wear showing pockets as well as the shirt waists. The shirt-waist suit illustrated on this page in Nos. 1162 and 1093 is not only an excellent model for mid-summer wear made up in gingham or cotton poplin, but the design will develop into a very serviceable little dress for the autumn made of light-weight worsted or a wool voile.

Blue this fall will still be the fashion, and very many are the shades which will be shown. Copenhagen blue will continue to be popular; navy blue for general wear will be much favored, and many greenish blues will be considered the mode.



No. 1164—Waist With Buttoned Plastron
Pattern cut for 34, 36, 38 and 40 inch bust measures.

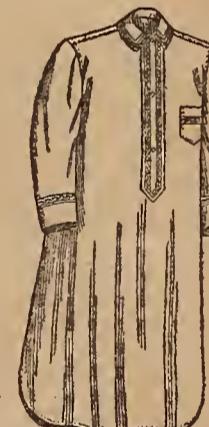


No. 1162—Tailored Shirt With Pocket
Pattern cut for 34, 36, 38 and 40 inch bust measures.

No. 1093—Seven-Gored Walking Skirt With Pockets
Pattern cut for 24, 26, 28 and 30 inch waist measures.



No. 1163—Kimono With Scalloped Yoke
Pattern cut for 32, 36 and 40 inch bust measures—small, medium and large.

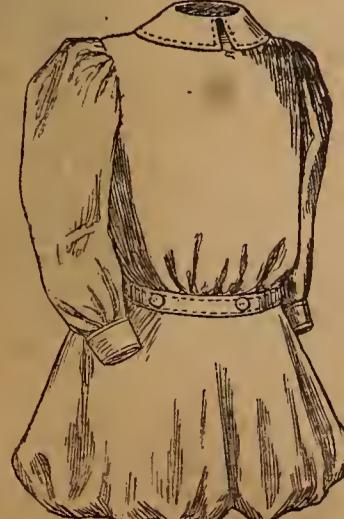


No. 807—Boy's Nightshirt

Pattern cut for 8, 10, 12, 14 and 16 year sizes. Quantity of material required for medium size, or 10 years, three and one half yards of twenty-two-inch material, or three yards of thirty-six-inch material.



No. 1161



No. 1161—Child's Rompers
Pattern cut for 2, 4 and 6 year sizes.



No. 854—Boy's Blouse Waist

Pattern cut for 4, 6, 8 and 10 year sizes. Quantity of material required for medium size, or 8 years, two and one half yards of twenty-seven-inch material, or two yards of thirty-six-inch material.

Clothes for Mid-Summer

SO EXQUISITE in color and design are even the least expensive of the filmy mid-summer fabrics that when they are made up they require but little trimming. A very new idea for a house gown is to have it made in kimono style like the pattern shown in No. 1163, and to use for its making a flowered cotton voile or organdy. If the flower design happens to be a rosebud, for instance, then the band which outlines the neck and trims the front of the gown is of flowered ribbon showing the same floral design as the material. A house gown made up in this way is extremely effective and yet can be gotten up most economically. Striped cotton voile is also a pretty material to use for such a gown, with striped silk for the trimming band.

Now that slenderness is the vogue, it is necessary that every woman pays special attention to the fit and the cut of her underwear. Combination drawers and corset covers are worn, and also the corset cover and very narrow little petticoat made in one. To have one's clothes fit as if molded to the figure is the special aim of the day. Sleeves are growing smaller, skirts narrower, and bodices are losing their fulness. Colors are also selected with a view to making the wearer look small. Many black gowns will be fashionable this autumn. Even the new ways of arranging the hair show the smaller pompadour, while the hats have more height than width.

For little tots there is no garment more practical for warm weather than rompers. The design illustrated on this page in No. 1161 can be used either as a little dress and worn over merely the underwaist and drawers, or it can be used like an apron as a protection to the dress. It is made with the leg portions particularly wide. Hop sacking is a good material to use for these rompers, and so is duck. Of course, if they are to be worn over a dress, it is well to have them made of some thinner material, such as gingham or percale. Don't select too light a shade, however. Tan gingham, plain or striped, will be serviceable, or any of the deep blues.

SUMMER CATALOGUE OF MADISON SQUARE PATTERNS

Our new summer catalogue cannot help but be invaluable to the woman who makes her own clothes. We will send it to your address for four cents in stamps. Order patterns and catalogue from the Pattern Department, FARM AND FIRESIDE, 11 East 24th Street, New York City.

Full descriptions and directions are sent with the pattern as to the number of yards of material required, the number and the names of the different pieces in the pattern, how to cut and fit and put the garment together, and also a picture of the garment as a model to go by.

THE PRICE OF EACH PATTERN IS 10 CENTS

When ordering be sure to comply with the following directions: For ladies' waists, give bust measure in inches; for skirt pattern, give waist measure in inches; for misses and children, give age. To get bust and breast measures, put a tape measure all the way around the body, over the dress, close under the arms. Order patterns by their numbers. Satisfaction guaranteed or money refunded.

OUR LATEST LIBERAL OFFER

We will give any two of these patterns for sending two yearly subscriptions to FARM AND FIRESIDE at the regular price of 25 cents each. Your own subscription may be one of the two. When ordering, write your name and address distinctly. We will send FARM AND FIRESIDE one year, new or renewal, and any one pattern for only 30 cents.



OUR YOUNG FOLKS' DEPARTMENT



Letters and Stories from Our Boys and Girls

DEAR COUSIN SALLY:—I saw your letter in the FARM AND FIRESIDE, and was pleased to know that it will be of some interest to you to know about the boys and girls.

I live on a farm, and I have a little garden of my own, in which I planted some peas, radishes, cabbage, lettuce and celery. The peas are about a foot high, and the other things are growing nicely, except the celery, which is not up yet. I would like to write some short stories to the FARM AND FIRESIDE if you would print them in the young folks' page.

Your cousin,
JOHN J. BORN, Age Thirteen.

DEAR COUSIN SALLY:—As you wanted the girls and boys to write to you, I thought I would try.

I am thirteen years old and live at Savonburg, Kansas. I am visiting my sister at Fort Scott now. She lives twenty-four miles from us. At home we have a telephone and a mail box.

I like to have school commence, and I am glad it is out, so we can have vacation again. I live across the road from the schoolhouse.

We can see the Fort Scott water towers from this place.

At home we had a large bed of strawberries, from which we had berries nearly every meal.

Your cousin,
DORA BABCOCK.

DEAR COUSIN SALLY:—I am a fifteen-year-old boy. My sister takes the FARM AND FIRESIDE. I live on a farm in southwest Missouri, on the Ozarks.

You wanted to know last issue what we were all doing. We have just finished picking strawberries, and now I am plowing corn. Did you ever pick any berries? They are a great money-making crop here. They are shipped North. While I was picking I put a rose and my name in a box. A few days later I received a letter from a little girl in Milwaukee, Wisconsin, stating that they got the berries and rose all right.

Yours truly,
ARCHIE GOODMAN.

DEAR COUSIN SALLY:—I saw in the latest FARM AND FIRESIDE your first prize contest, and I will be glad if we can have one very often. I went straight to work the moment I got the paper, and ran my eye across that page. I got some of the cities.

You spoke about the age in your last letter. I am eleven.

Say, those stories were just fine. I liked both of them—"A Little Tenderfoot" and "Esther's Adventure." I also like fairy stories. Affectionately yours,

HAZEL R. WOOD.

DEAR COUSIN SALLY:—I am very glad that we have a Cousin Sally to write to. This is my first letter to you. I like to read the other children's letters.

I have a pet fish in a little pond near my home, and when it sees me on the bank it swims to me, and I feed it sometimes. It is very small, only two inches long.

I am anxious for the contests every month. I think they are fine, and I love to try for the prizes. Lovingly,

LYNN DRURY.

Beth's Birthday Gift

BY JULIA M. HUNTER

BETH was thirteen years old. She was kind hearted and every one loved her. She loved to visit and comfort the poor and nurse the sick, but she was very weak.

It was May, and Beth's birthday was drawing near. Her parents were very wealthy. Her father did not know what to give her, but Mrs. Whitney (her mother) suggested a pony and cart. She thought that it would save her much walking and she could visit more of her poor friends.

So it was decided that Beth should go to play with one of her little neighbors. The time passed very nicely and she was gathering up her games when the door bell rang. The maid answered the door and came back with the message that "Miss Beth must go right home;" but to her surprise, there stood a tiny Shetland pony harnessed to a light cart. Her father sat in it, holding the reins. She jumped in and drove all the way home. Of course, her father had to teach her the ways of driving, but she learned very rapidly. It is impossible to name the many, many trips she made, carrying food, clothing and fuel to the poor and books, toys and flowers to the hospital.

How Arthur Saw the Circus

BY CHELSEA CURTIS FRASER

FOR at least five weeks the great flaming posters had been looking Arthur in the face every time he passed a barn on his way to the village. The boys had said that passes had been given to the families who owned these barns, and Arthur considered them the most fortunate beings in the world. If only his father's barn had been closer to the road! But it was too far back, so the circus agent had not asked to put his bills up there.

Arthur thought this very hard luck, for if ever a boy was anxious to see the "Great European Shows," he was that boy. Almost every one along the country-side was going, and for a time he had hoped to earn enough money to buy a ticket. But the weeks had slipped by, and here it was the very day of the circus and he had not a cent in his pocket. His father had been sick and Arthur had to do so many odd jobs about the house that there had been no time to earn any money whatever.

So on this morning, when other lads were flocking into the village to see the

as he had never strained them before. When he reached the shore he was only about thirty yards ahead of the beast. Springing out, he made for a large oak close to the water's edge, and climbed it. Barely had he gotten to the first strong limb before the elephant had come up beneath. Trumpeting furiously at being cheated of his prey, he struck his great head against the body of the tree as though he would butt it over.

Lucky it was for Arthur that the oak was of sturdy growth. Such was the power of the big creature that the boy had to cling to the tree with all his might to keep from being shaken off by the severe blows. Again and again the tree shook fiercely and showers of leaves and dead twigs fell about the dripping animal.

Finding that this means would not avail him, the elephant presently turned his attention to the boat and vented his spite by smashing it into kindling wood. Then he stood for a time and eyed Arthur angrily.

But it was not long that the elephant remained inactive. Stepping down into



"The elephant had plunged into the water and was swimming toward him"

circus, Arthur, with a heavy heart, shouldered his fishing pole and struck off across lots. Yes, since going to the circus was out of the question, he would spend the day at Black Bass Lake fishing. It is also a good place to swim, too; but you must be careful not to go in on the eastern shore, for there a belt of treacherous quicksands extends for some distance. The old settlers said that two men had lost their lives in the sands, to say nothing of countless animals.

Stepping into a canoe when he reached the lake, Arthur prepared to paddle out. It was quiet and cool all around, but he would rather have had the hot, dusty atmosphere of the circus. He had taken scarcely a dozen strokes with the paddle when there was a loud crashing of under-brush from behind, accompanied by a shrill, strange cry.

Arthur turned around sharply. Emerging from the bushes and trees on the lake bank was the huge, lumbering body of an elephant. Apparently he had seen the young fisherman before he was detected himself, for the beast seemed to be heading straight for him.

For a moment the boy was paralyzed and could not move a muscle. The elephant screamed again. Arthur dug his paddle into the water and made a few strong strokes—then turned and looked again. The elephant had plunged into the water and was swimming toward him, his trunk waving above the surface like a huge serpent!

Arthur headed the boat up the lake and paddled for dear life. He had not gone far before he became aware that the elephant was gaining on him, slowly, but very surely. Terror seized him and his limbs shook. He could not hope to get away by keeping to the boat. If he could only get up a tree he might get out of his pursuer's reach until help arrived.

Arthur turned the canoe toward the opposite shore and strained his muscles

the water, he submerged his trunk as if drinking. Arthur began to breathe easier. He was quickly undeceived; all at once the great proboscis was elevated in the refugee's direction and several buckets of water were discharged at him. Arthur was now wet to the skin. Again and again the trunk was pointed at him and he was deluged with water and nearly blinded. Then he shifted around on the opposite side of the trunk.

Arthur watched cautiously from his safer position. Presently the elephant emitted a series of shrill cries. They were not like his other trumpetings. Instead of anger, Arthur was sure there was now a plaintive note in them—a note of terror or pain. The screams continued deafeningly until the woods echoed and reechoed with them. Arthur watched eagerly. The elephant seemed striving to move, yet unable to do so.

Up to this time Arthur had not thought of the quick-and-slow. Now he remembered them. The elephant was stuck fast in them. Every moment he was being drawn further into their relentless clutch.

Assured that his descent could be safely made, Arthur let himself down out of the tree, and hurried homeward, the frightened calls of the beast ringing in his ears half the distance.

On the way he met Timmy Sullivan.

"Say, Arthur, the largest elephant of the circus has got loose and they will give ten dollars to any one who finds him!"

Just then one of the circus clowns, the acrobat and a crowd of people came into view. He rushed up to the clown and stammered out his story.

The people of the town joined with the people of the circus to rescue the elephant, but it was Arthur who was the hero of the day. Not only was he given a free admission to the performance that afternoon, but he was ten dollars richer and the envy of every boy of the village.

Cousin Sally's Letter

DEAR BOYS AND GIRLS:—

What jolly good times my little cousins seem to be having this summer! Your interesting letters are full of news of the things you are doing, visits you are making and parties and picnics you are planning. The nicest part of it is that most of you are doing other things than play. Some of you are picking berries or helping with the housework, and some of you are caring for chickens and learning to milk. All of you seem to have some little tasks that are making you familiar with the work of the home and the farm.

And we people who have to work part of the time feel that we ought to play so hard in the time we have for play that we get much more fun out of our free time than those who do nothing all day. We have a very great advantage over them, too, in knowing how to do many things. Don't you find it so? Think of the laziest boy or girl you know and then of yourself. Which of you is the happier?

The stories which you are sending me for the contest show that my little cousins certainly do "play while they play." Such very jolly days you have had! Just as soon as there is space on our page I want to print some of the prize stories. The good times that other boys and girls have had may help you to plan your own.

I am glad that so many of you are enthusiastic over the prize contests. If you have any suggestions for future contests, I wish you would send them to me for consideration. And don't forget that Cousin Sally is always very glad to hear from all of you at all times.

Affectionately,

Cousin Sally.

A Dutch Lullaby

Wynken, Blynken and Nod one night
Sailed off in a wooden shoe—

Sailed on a river of misty light

Into a sea of dew.

"Where are you going, and what do you wish?"

The old moon asked the three.

"We have come to fish for the herring fish

That live in this beautiful sea;
Nets of silver and gold have we,"

Said Wynken,
Blynken
And Nod.

The old moon laughed and sang a song:
As they rocked in the wooden shoe,
And the wind that sped them all night long

Ruffled the waves of dew;
The little stars were the herring fish

That lived in the beautiful sea;
"Now cast your nets wherever you wish,
But never afeared are we,"

So cried the stars to the fishermen three,
Wynken,
Blynken
And Nod.

All night long their nets they threw
For the fish in the twinkling foam,
Then down from the sky came the wooden shoe,

Bringing the fishermen home.

"Twas all so pretty a sail, it seemed

As if it could not be;
And some folks thought 'twas a dream
They'd dreamed

Of sailing that beautiful sea.

But I shall name you the fishermen three:

Wynken,
Blynken
And Nod.

Wynken and Blynken are two little eyes,
And Nod is a little head,

And the wooden shoe that sailed the skies

Is a wee one's trundle bed;

So shut your eyes while mother sings
Of the wonderful sights that be,

And you shall see the beautiful things
As you rock in the misty sea

Where the old shoe rocked the fishermen three—

Wynken,
Blynken
And Nod.

—Eugene Field.

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"For Keeps"

"COME, Willie," said his mother, "don't be selfish. Let your little brother play with your marbles a while."

"But," protested Willie, "he means to keep them always."

"Oh, I guess not."

"I guess yes!" "Cause he's swallowed two o' them already."—Philadelphia Press.

A Brightened Blessing

By Louise J. Starkweather

TOM TROWBRIDGE put on his hat, dressed children flitting about the streets, and groups of sedate older people gathering along the line of the parade. With the remembrance came the thought of bolting, taking a short cut to the railroad station, and going to the city.

It was a beautiful spring day, with the promise of summer in the softly blowing breeze and the opening buds. His little farm stretched along for a dozen acres on both sides of the road. His pretty home was perched on top of the low hill overlooking his own small estate, but as he drove along he realized uneasily that it was almost with a feeling of disgust that he eyed his growing crops. He realized also that during the last few weeks he frequently had experienced the same feeling.

Yet here he was, young, strong and with many interests in life, finding it and his occupation distasteful after a few months' trial. He was all the more annoyed, because he had enjoyed this life in the country so much at first.

He had always thought that he would like to be a farmer. The small, poorly ventilated city office, where he had worked for half a dozen years, had always been distasteful to him, and when the letter had come from his grandfather offering to give him the farm if he would come and take care of him, he had thought himself a very lucky fellow.

At first he had found the country life even more delightful than he had imagined.

To most of the whole-hearted people who lived on the neighboring farms he seemed something of a curiosity, for while they were looking forward to the time when they could leave the farm and go to the city, here was a fellow who had actually given up that life and come to the quiet country. And the strangest part of it was that he seemed to be enjoying the change.

Of course, they did not stop to think of the dull routine of office work, the hall bedroom and the possibility of losing one's position at almost any time. They did not realize the independence of life in the country, where a man is practically his own master, where he can take a day for pleasure now and then, or lay off for a few hours if he does not feel well enough for work. They did not appreciate the privileges of a few tried old friends in place of many mere acquaintances.

But to Tom Trowbridge all this was good, and perhaps if he had been asked what of it all was the best he would have said the friends. Perhaps he would even have acknowledged that it was just one friend, and that one Alice Warren. She had been among the first of the people whom he had met. For him it had been a case of love at first sight, and he had shown his preference very clearly from the beginning.

Suddenly his grandfather became very ill, and in a few days utterly helpless. Tom gave up everything else to take care of him, and for nearly a year he had remained shut in with the invalid, until one day in the early fall his grandfather had left him.

Only a little while before his grandfather's death he had heard that Alice was going to the city to live; that a distant relative had given her a position of some sort in his office, and that she would probably go in a few days.

Alice gone to the city to live! She was one of the young people who had wondered at his giving up his life there. She had laughingly predicted that he would go back again in the near future. She had teasingly said that one who could live there and who wouldn't ought to be made to live there.

At the time this had only amused him, and with the hopefulness that had been one of his characteristics, he had felt sure that some time he could make her see things with his eyes. But his grandfather's sickness had separated them for a while, and now she was gone.

The situation seemed almost hopeless to him, and on this particular day, as he was driving past his farm and on toward the village, it seemed as if he were a little more lonely and disheartened than usual. It seemed as if he could not go on the rest of his life in this way. He wanted Alice, and he began to realize that he wanted her more than he wanted his free and independent life in the beautiful country.

Slowly a plan formed itself in his brain—a plan to go back to the city, get another position there, and then perhaps he could win her for his wife. So intent was he on this idea that he almost forgot that it was Memorial Day and that he had come to town to take part in the usual celebration.

The village had always been proud of its heroes, and celebrated Memorial Day with especial pomp and ceremony.

All this had slipped Tom's mind until he heard snatches of music, saw white-

Rootless Cactus of California

CURIOUS among vegetable growths of the new world, and one which is seldom seen of men, is the rootless cactus of the California desert. This plant, a round, compact growth, rolls about the level floor of the desert for some eight or nine months of the year, tossed hither and yon by the winds.

At the coming of the rains, or, rather, the cloudbursts, which sweep the desert in its spring time, this cactus takes root wherever it happens to have been dropped by the last wind of which it was the plaything, and immediately begins to put out all around it small shoots, which become cacti, exactly like the parent plant.

These young growths increase in size rapidly, sucking the moisture both from the parent plant and from the surrounding earth. The roots do not penetrate the soil deeply, but spread often over a circle whose radius is not less than ten feet. These roots, too, are small, but practically innumerable, and they get every bit of moisture and plant food to be had in the territory they cover.—*Technical World Magazine*.

Suiting his action to his thought, he turned down a side street, and in a few minutes was making his way to the ticket office. As he did so, a train from New York just pulled into the station. Carelessly he watched the few passengers alight. Then suddenly he sprang forward as a slender, dark-haired girl left the train and moved toward the waiting room. He was at her side in a moment.

"Alice!" The exclamation was full of incredulous joy. "Is it really you?" he went on, as she turned toward him, smiling. "Yes, really. Did you think I was my own ghost?"

"Oh, I don't know—I didn't dream you were coming."

"Nor I—until this morning." She had given him her bag, and they were walking slowly toward the waiting room. "But it was such a beautiful day—a holiday, you know, for us working folk"—she smiled a little gravely—"and I just couldn't stay in the city."

"And I was just thinking that I couldn't stay in the country."

Tom smiled, too, and his face spoke the happiness he felt in her presence.

"You were thinking of going to the city—on such a day—and you are so fond of all this?"

They had passed through the waiting room, and she was looking beyond the few houses, to the fields and woods. But Tom's eyes had turned toward her face.

"Yes, I'm fond of all this, but I've discovered I'm fonder of—of something else." They had moved to the end of the platform now, and were beyond the probability of interruption. "I was just going down to find you and tell you that I wanted to go back to the city so that I could be near you—and—perhaps—after a while—persuade you—"

He stopped short as he saw the sudden tears in her eyes.

"Oh!" there was a little catch in her breath, "you cared enough—for that?"

He nodded. "I care more than I'm afraid I can ever make you see."

The girl looked at him for a moment, and then, taking a sudden resolution, she began quickly:

"I'm going to tell you that I came up to-day ostensibly to attend the Memorial Day exercises here and put some flowers on my grandfather's grave, but," her cheeks flushed a little, "really to get a glimpse of the beautiful country and to see you—and tell you, if I had the chance, that I understand now why you love it so. 'Blessings brighten,' you know," she laughed tremulously.

"You mean"—Tom looked at her incredulously—"you mean that you would be willing to come back here to live?"

The girl laughed joyously. "Yes." Her eyes lighted as they swept the green fields, the blossoming trees and the cloud-flecked sky. "Yes," she took in a deep breath, "I believe I might if I were asked—"

"If you were asked! Oh, my girl, I've wanted you so."

Tom looked at her for one long moment, holding her eyes with his own. Then he, too, drew a long breath and squared his shoulders.

"Come," he said, "I'm not going to wait. We'll telegraph those folks down in New York to fill your position at once. We'll tell them you are going to accept a new position—that of the wife of the happiest man in Knowlton."

When a man ain't got a cent, an' he's feelin' kind o' blue,
An' the clouds hang dark an' heavy, an' won't let the sunshine through,
It's a great thing, O my brethren, for a feller just to lay
His hand upon your shoulder in a friendly sort o' way!

It makes a man feel curious; it makes the tear drops start,
An' you sort o' feel a flutter in the region o' the heart.
You can't look up and meet his eyes; you don't know what to say,
When his hand is on your shoulder in a friendly sort o' way.

—James Whitcomb Riley.

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SPRINGFIELD, OHIO



Sunday Reading

What Will You Stand For?

A MAN of sterling worth was obliged by the state of his health to seek a new home for himself and family in a warmer climate. At the public "farewelling" given by his townspeople in his honor, much of tender appreciation and honest esteem was expressed. He was a man who had been a social and moral help to the town. He had stood out strong for everything which meant the upbuilding and advancement of the community in which he lived. He was not a wealthy man. He was not a brilliant man. He was not a politician. Many of his best years had been spent in good hard toil upon a farm. But he had been ready in every case to use his time, his energy, his influence and his money toward any scheme which would benefit the community.

He might have been a richer man if he had given less of himself to others, but he counted the social and moral worth of the community in which he lived to be of more value to himself and family than the accumulation of wealth. His family, without an exception, stood for those things which he had taught them by his example, rather than precept.

The struggling man or woman always found a friend in this broad and kindly man, a friend who was ever ready with a word of encouragement, with help if it was needed.

He was not a noted man, was probably not heard of outside of his own township, but he was well known and well loved there. It is said that no large-souled, broad-minded man can fail to make some enemies. This man of course had met opposition, and although his bitterest opponents did not love him well, they could not fail to respect him. But the mass of people, as I said before, loved him, and it was their large appreciation of his worth that had prompted this public recognition of his interest in the "best things" of that community.

Others had lived and died in that same town who had also sown the seeds of integrity, worth and growth, probably with little, if any, of the acknowledgment of their efforts accorded to this man. It takes many lives, most of them unlauded, often unappreciated, to build up a community to that high plane where they can see and recognize the worth of such individuals. But the All-Seeing God looks on and knows, and such lives shall not lose their rewards.

As I look out about me and see young men and young women starting forth on life's journey, I ask myself the question, What are they going to stand for in the life of their community? Will they stand like this man, for all that is good and improving and upbuilding? Or will they be like those individuals, more often met, who stand back with their hands clasped tightly over their pocketbooks, and wisely nod "Yes, yes, a good idea, a very good idea. I hope it will be successful. But— Oh, no, really I couldn't help. I—I haven't the ability—or the time. No, I really couldn't do it." Ready to acknowledge the worth of a project, but unwilling to give their activities or of their cash to further it in any way. Or, possibly, like still another class, who are willing to help, but are wonderfully afraid of lifting more than their share of the load.

Somebody has got to lead. Somebody has got to go ahead. Why not you? Don't cultivate that measly little talent of "taking a back seat."

An evangelist once said to me, "The rougher element slouch into our meetings and take a back seat, ready to make trouble if possible. As they become interested, each night they move up a seat or two. When finally they come out, as they sometimes do, strong for the right, they walk straight in and manfully take a seat near the front."

The man in the back seat is no help to the meeting. The man who takes a "back seat" in the affairs of his community is little, if any, help. Let him get out and hustle. Let him pull here and push there until he has done his "best" toward making his home town or community a better place to live in.

PEARLE WHITE McCOWAN.

Two Went Up to the Temple to Pray

Two went to pray? Oh, rather say. One went to brag, the other to pray; One stands up close and treads on high, Where the other dares not lend his eye; One nearer to God's altar trod, The other to the altar's God.

—Richard Crashaw.

Making Others Happy

MAKING people happy is neither a small nor an unimportant business. As I regard good nature as one of the richest fruits of true Christianity, so I regard the making of people round about us happy as one of the best manifestations of that Christian disposition which we are commanded to wear as a garment.

Now, beside the great ends which men are commanded to seek—their manhood here, and their immortality hereafter—there is a distinct command that they shall so carry themselves in the weighty business of life that they shall make all around them happy. And not occasionally, by a gleam and a smile; it is to enter into our fundamental notion of the carriage of our lives. We are deliberately and anxiously to cast out from ourselves those elements that make needless

News of Temperance Reforms

A RECENT Pittsburg despatch to the Chicago "Record Herald" says:

"Drinking while on or off duty by employees of the H. C. Frick Coke Company, a subsidiary organization of the United States Steel Corporation, will result in an immediate dismissal of the offenders, according to rules posted throughout the Connellsville coke region. The order, which is the most sweeping of its kind in the history of the industrial world, will affect more than twenty thousand employees."

Evidently the food value of liquors and the social "good cheer" promoted by drinking, as set forth in the current press matter put out by the liquor interests, have not made much impression upon the employers of labor. And, too, here is a private corporation assuming to curtail "personal liberty" in a way that we are



From a Painting by H. Hofmann

Now as they went on their way, he entered into a certain village: and a certain woman named Martha received him into her house. And she had a sister called Mary, who also sat at the Lord's feet, and heard his word. But Martha was cumbered about much serving: and she came up to him, and said, "Lord, dost thou not care that my sister did leave me to serve alone? Bid her therefore that she help me." But the Lord answered and said unto her, "Martha, Martha, thou art anxious and troubled about many things: But one thing is needful: for Mary hath chosen that good part, which shall not be taken away from her."—Luke x, 38-42.

pain; and we are to cultivate and employ—and that generously and continuously—those elements which make pleasure and which make our fellow-men happier.

Sometimes men have thought that it was useful for a Christian to lay aside smiles and laughter and gaiety. Nay! Nay! Till the world weeps less, I think there should be more smiles. Till the world sorrows less, there should be more gaiety. Till the world lives better, there should be more of the imagination and of refined taste thrown over the rude forms of actuality in life. Blessed are those in whose presence the dust of care is laid by moistening drops! Blessed are they whose eye is serene; whose voice is gentle; whose heart is sweet; whose life makes happiness!

How much would neighbors rise in value, and how much would neighbors rise in beauty, if all should lay aside habits of criticism, and neighborhood scandal, and petty feuds, and ridicule! And if men should study the things that make for peace, and the things that make for happiness, everybody trying to make everybody else happy, what a revolution there would be!—From the Plymouth Pulpit Sermons of Henry Ward Beecher.

assured governments have no right to do. The poor laborer is being oppressed! He is denied the privilege of spending his money for that which renders him unfit for his duties. And this in Pennsylvania, the favorite habitat of the foreign laborer, who, we are told, must have his beer and wine.

It can only be a question of time when the great employers, having experimented with total abstinence along-side the open saloon, will throw their powerful influence in favor of laws that will remove the temptation by closing the liquor shop.

Indeed, this is what has already occurred in many Southern manufacturing districts. As for the laborers, when they have had opportunity to vote on the question, they have usually manifested their ingratitude to their defenders, the brewers et al., by voting them out of existence in nearly every case.

"WE HOLD that if it is wrong for an individual to place the bottle to another man's lips, it is also wrong for the town, city, state or nation to do so. Therefore, we hold to total prohibition. Let us ask ourselves if this example be safe."—Rev. Anna Shaw.

Maxims from Some Wise Men

Good, the more communicated, more abundant grows.—Milton.

Every lot is happy to a person who bears it with tranquillity.—Boethius.

Those who borrow trouble multiply it, and then lend it to their friends.—Chester Peake.

When you can't have your own way, don't pose as a martyr at the stake earning a halo.—Maltbie D. Babcock.

It is thy duty oftentimes to do what thou wouldest not; thy duty to leave undone what thou wouldest do.—Thomas à Kempis.

There is no beautifier of complexion or form or behavior like the wish to scatter joy, and not pain, around us.—R. W. Emerson.

If wrinkles must be written upon our brows, let them not be written upon the heart. The spirit should not grow old.—James A. Garfield.

Life is made up not of great sacrifices or duties, but of little things in which smiles and kindness and small obligations given habitually are what win and preserve the heart and secure comfort.—Sir H. Davy.

During a long life I have proved that not one kind word ever spoken, not one kind deed ever done, but sooner or later returns to bless the giver and becomes a chain binding men with golden bands to the throne of God.—Lord Shaftesbury.

Nothing is intolerable that is necessary. Now God hath bound thy trouble upon thee with a design to try thee and with purposes to reward and crown thee. These cords thou canst not break; and therefore lie thou down gently and suffer the hand of God to do what He please.—Jeremy Taylor.

Happy? If Not, Why Not?

WE HAVE seen many painful examples during the past few months of the failure of wealth to produce happiness. We have seen that a fortune without a man behind it does not stand for much in this world. The X-rays of public investigation have revealed some ghastly spectacles.

Of a number of rich men who were in positions of great responsibility and trust at the beginning of the recent financial panic, some have committed suicide, others have died from the effects of the disgrace which they had brought upon themselves and their families, and still others have suffered tortures, not so much because of their wrong doings, as from the fear of disclosures.

A few months ago these men were supposed to possess the things which make men happy. They had what all the world is seeking so strenuously—money. They lived in palatial homes, were surrounded with luxuries, and yet the moment misfortune came, what they called "happiness" fled as though it had the wings of a bird.

These men felt secure because they had that which most everybody is struggling so hard to get. They had supposed themselves so solidly entrenched in the wherewithal of life, so buttressed by their "solid" investments, that nothing could shake them.

But almost in the twinkling of an eye their foundations slipped from under them, their reputations were gone, and instead of being the big men they thought they were, they not only found themselves nobodies, but their "happiness" fled with their reputation.

It does not matter that the great majority of the human race believe there is some other way of reaching the happiness goal. The fact that they are discontented, restless and unhappy shows that they are not working their problem scientifically.

We are all conscious that there is another man inside of us, that there accompanies us through life a divine, silent messenger, that other, higher, better self, which speaks from the depths of our nature, and which gives its consent, its "Amen" to every right action, and condemns the wrong.

Men and women in all times have tried to bribe this constant monitor, to purchase its approval, to silence it in nervous excitement, to drown it in vicious pleasure, and with drink and with drugs, but all is vain.—Orison Swett Marden in Success Magazine.

The Enlightenment of Richard

By Hilda Richmond

MY POOR, infatuated boy!" groaned Mrs. Gilbert, as the telltale mirror showed Richard Gilbert rapturously kissing a note a messenger boy had just brought him. "Maria, you have no idea what we have endured during the past few months. Of course, you know nothing about my feelings, never having had a family, but I have suffered more than tongue can tell. Edith Thurston is shallow and vain and selfish, and I cannot understand why. Richard doesn't see what is clear to every one else. You know he wouldn't go back to college in the fall simply because he wanted to be near her. I really don't know how I've kept sane all these months."

Miss Maria Nelson, sitting bolt upright in her straight chair, went on with her sewing, apparently undisturbed. "Have you done anything to break it up?" she inquired while her sister wiped her eyes.

"Anything! Maria, there isn't a thing we haven't done. They are engaged and the wedding day set, but we still hope against hope. She is older than Richard and in every way unsuited to him, but no one could persuade him of that. Every one knows her complexion is not real—every one but Richard—and he is always raving about her beauty. He thinks her the most wonderful person that ever existed, and she is clever enough to pull the wool over his eyes. If you get a chance, Maria, do say a word to him. I don't suppose it will do any good, for you have never had experience with children, but there is no harm in trying."

If anything ever ruffled Miss Nelson, it was the insinuation that there was anything beyond her power to manage. It exasperated her beyond measure to have her brothers and sisters say calmly that she knew nothing about children. She lived on a fine, large farm, and every summer for years her nephews and nieces had been sent to her by their parents, so that she knew more than most of her relatives on the subject of managing children. To-day she was in no mood to hear the oft-repeated assertion, so she laid down her sewing and spoke her mind.

"Fanny Nelson, I wish you would stop saying I know nothing about children. You have only two, while I've had the care of a dozen or more every summer for years. If you had managed right, Richard never would have become infatuated with this girl. If I had a mind to, I'd break it up right while I'm here visiting, just to show you a few things."

"It's all very well for you to say that, Maria, but I know you couldn't bring Richard to his senses. If his own mother's

prayers and tears are unavailing, what could you do?"

Mrs. Gilbert retired into her handkerchief, but at that moment callers came, and she was forced to assume a company smile. Miss Maria still sewed grimly, and to all intents the conversation was forgotten. Richard came in all disconsolate because Edith had a headache and could not see him for the third time that day, and he sat down to pour out his troubles to his aunt.

"I want you and this girl to whom you're engaged to go with me for a ride to-morrow, Richard," said Miss Maria when she had a chance to put in a word. "I see your mother doesn't like her very well, and I may not have another chance to meet Miss Thurston. You needn't mention it to your mother at all that we will take her. I think you can manage the machine all right, and we will tell her we are going out for the afternoon."

"Oh, Aunt Maria, you don't know how happy you make me. Father and mother make so much fuss that you would think I had committed some crime. Edith is the dearest and sweetest and loveliest girl that ever lived, but they are prejudiced against her. I often think it is because her parents are not as wealthy as mine, that they object so strongly, but I love her all the more because she is so brave and sweet about things she can't have."

It was all Miss Nelson could do to remain silent during the stream of praises that followed. She mentally pitied her afflicted sister, but not for worlds would she have acknowledged it. Edith's hair, her eyes, her charming disposition—Edith—Edith—Edith—until her head fairly swam, but she managed to control herself for the sake of her plan. Finally tea was announced, and afterward Richard hurried away to inquire about his sweetheart.

"I don't see how in the world Richard can do a whole afternoon without Edith," was Mrs. Gilbert's comment when she heard about the ride. The big machine was puffing in front of the house, and the two plotters were ready to start, but they failed to ask any of the family to accompany them. The machine had been recently purchased by Miss Nelson, who delighted in thinking herself up-to-date in every particular, and Richard was surprised to think she would allow him to touch her pet.

"The run won't take more than an hour or two," said Miss Nelson. "We'll be back presently. Good-by!"

Once out on the smooth highroad the big machine was sent skimming along, and the happy lovers were at peace with the

whole world. Richard could not make love openly while he had to watch the road and the machine, but it was bliss to have Edith beside him, and one sympathetic relative to beam on them from the back seat. It was an exquisite summer day, and the road to Aunt Maria's farm was dustless after the summer rain.

"We'll stop in the village and take the doctor with us," announced Aunt Maria, as they neared a little hamlet. "My tenant has a sick baby and I feel anxious about it. When I left home yesterday morning it had a little fever, but the mother is so young and inexperienced that she may have neglected to do anything to relieve the child."

With the young doctor seated beside Miss Nelson the rest of the trip was quickly made, and it was not long before they were all in the little house, with the doctor examining the sick baby. Richard and Edith wanted to remain outdoors, but Aunt Maria was firm, and they had to go in. "A mild form of smallpox or something like it," said the doctor, lifting the hot little hand. "Where have you—"

"Smallpox!" screamed Edith, rushing for the door. "Take me home at once!"

"Hush!" said the doctor sternly. "Young man, you must not leave the place. We have all been exposed, and must stay here. There is no danger, but it is against the law to go spreading infection over the country."

Richard tried to comfort the frightened girl, but she moaned and sobbed without restraint. Miss Nelson took everything calmly, and set about getting supper for the family. Richard would have been glad to sit beside Edith until she awoke, but his aunt ordered him to bring in water and peel potatoes and do so many chores that the girl was left to herself on the old lounge. When supper was nearly over she came out and looked reproachfully at her lover, who was eating a substantial meal.

"I couldn't think of eating a bite," she said disdainfully.

"Well, sit down, and maybe your appetite will come to you before bed time," said Aunt Maria complacently. "Richard, I'm glad you are making such a hearty meal, for I want you to help with a lot of chores after supper. You'd better eat something, Miss Thurston," she added, "for we may have to call on you to do the dishes while we are working around outside. Mr. Gray has to go clear to the back pasture to get the cows, and there's chicken feeding and everything on hand."

"I never wash dishes," said Edith. "I don't know how."

"Does your mother keep help?"

"No, we haven't a servant," said Edith. "Mother says they are so shiftless."

"Then your mother does the work alone, does she?" went on Miss Nelson.

"Yes, she enjoys doing it," said Edith. "She is never happy unless she is fussing around the kitchen."

"Well, if you can't wash dishes, you may make the baby a new gown," went on Aunt Maria. "It will need a great many while it is sick. You will find the goods on the sewing machine and the scissors in the basket."

"I never sew," said Edith shortly.

During the days that followed Richard refused to see any flaws in his sweetheart, but intimate association with the selfish, faultfinding girl at last opened his eyes. Edith without curling irons and puff box and the dainty accessories of the toilet was a different-looking girl from the Edith he had known.

"I think it is positively vulgar the way you are always thinking of something to eat," said Edith languidly one day, as Aunt Maria made apple dumplings in response to her nephew's pleadings.

"If you worked as hard as I do, you'd be hungry, too," said Richard good-naturedly. "You'd better let Aunt Maria teach you how to make these dumplings, for I'll want them every other day, at least, when we set up housekeeping."

"We will never keep house together," said Edith coldly. "These few weeks have taught me that a man who will neglect his betrothed as you have would make a very poor husband." She handed him his ring and left the room.

Richard looked after the retreating figure with an expression of relief on his face, and then said softly, "That's over easier than I thought, Aunt Maria. Make a few extra dumplings to celebrate."

That very day the quarantine was lifted and the big machine bore three silent people back to town. "Maria Nelson!" said Mrs. Gilbert the instant she saw her sister, "I've been nearly distracted ever since you went away that day. The idea of taking those two silly people into such danger. The smallpox was nothing compared with the opportunity to see each other every minute in the day. Don't tell me again that you know anything about managing young people."

"Now, Fanny, just be calm," said Miss Nelson with the ghost of a smile on her stern face. "The smallpox was measles and the opportunity to see each other every minute of the day broke up the engagement, so there was absolutely no danger. I don't suppose I will ever get credit for it, but I brought Richard to his senses. Don't forget that!"

From the Joke Makers

Open to Conviction

MRS. HAYSON—"Now, David, ye know I like ter see ye go ter the dairy-men's convention; but while ye're in the city I want ye ter promise ter keep good hours, not ter drink a drop, go ter church, an'—"

MR. HAYSON (interrupting)—"Now, look a-here, Mary! If I can't go to a convention uninstructed, why, by ginger! I'll stay ter hum."

The Two Alternatives

"WE GET some sad cases," said the attendant at the lunatic asylum to the visitor, and opened the door to the first cell.

Inside was a man sitting on a stool and gazing vacantly at the wall.

"Sad story," said the attendant; "he was in love with a girl, but she married another man, and he lost his reason from grief."

They stole out softly, closing the door behind them, and proceeded to the next inmate. This cell was thickly padded, and the man within was stark, staring mad.

"Who is this?" inquired the visitor.

"This," repeated the attendant—"this is the other man."—Tit-Bits.

Very Practical

"WHAT would you do, dear, if I were to die?" asked Mrs. Darley fondly. "I don't know," replied Darley thoughtfully. "Which is your choice—burial or cremation?"—Tit-Bits.

Clever? Well, Rather

"A LERT?" repeated Senator Hopkins when questioned concerning one of his colleagues. "Why, he's as alert and clever as the Aurora bridegroom I heard of the other day. You know how bridegrooms starting off on their honeymoons

have a way of forgetting all about their brides and buying tickets only for themselves? Well, that's what this Aurora bridegroom did. And when his wife said to him, 'Why, John, you only bought one ticket,' he answered without a moment's hesitation, 'By Jove, you're right, dear! I'd forgotten myself entirely!'"—Everybody's.

How Did They Become So?

MOTHER—"Why, Bobbie, how clean your hands are!"

BOBBIE—"Aren't they! But you ought to have seen 'em before I helped Bridget make the bread!"—Life.

The Soft Answer

SENATOR TILLMAN at a banquet in Washington said, in a humorous defense of outspoken and frank methods: "These people who always keep calm fill me with mistrust. Those that never lose their temper I suspect. He who wears under abuse an angelic smile is apt to be a hypocrite."

"An old South Carolina deacon once said to me with a chuckle:

"Keep yo' tempah, son. Don't you quarrel wid no angry pusson. A soft answah am alus best. Hit's commanded an', furthermo', hit makes 'em maddah'n anything else you could say."—Washington Star.

Reasonable

THERE is a lawyer of Cleveland whose quick wit is said never to desert him either in the courtroom or elsewhere.

Not long ago a client entered his office, and throwing back his coat, exclaimed irritably, "Why, sir, your office is as hot as an oven!"

"Why shouldn't it be?" asked the lawyer smilingly. "It's there that I make my bread."—Harper's Monthly.

Rip Van Winkle

RIP VAN WINKLE returned from his long sleep looking fresh as a daisy, and made his way to the village barber shop, not only because he needed a hair cut and shave, but also because he wished to catch up with the news.

"Let's see," said he to the barber, after he was safely tucked in the chair, "I've been asleep twenty years, haven't I?"

"Yep," replied the tonsorialist.

"Have I missed much?"

"None; we bin standin' pat."

"Has Congress done anything yet?"

"Not a thing."

"Jerome done anything?"

"None."

"Platt resigned?"

"None."

"Panama Canal built?"

"None."

"Bryan been elected?"

"None."

"Carnegie poor?"

"None."

"Well, say," said Rip, rising up in the chair, "never mind shaving the other side of my face. I'm going back to sleep again."—Success Magazine.

Uncle Joe Speaks

WOMAN-SUFFRAGE ADVOCATE (to Speaker Cannon)—"I maintain that woman has always been the prime factor in this world."

UNCLE JOE (blandly)—"Oh, I don't know. In the very beginning woman was only a side issue."—Exchange.

A Definition

RUFUS CHOATE once endeavored to make a witness give an illustration of absent-mindedness.

"Wall," said the witness cautiously, "I should say that a man who thought he'd

left his watch to hum, an' took it out'n his pocket to see if he had time to go hum to get it—I should say that that feller was a leetle absent-minded."—Everybody's.

Professional

THE little daughter of a homeopathic physician received a ring with a pearl in it for her birthday. Two days later she poked her head in at the door of her father's office.

"Papa," she sobbed, "papa, I've lost the little pill out of my ring."—Harper's Magazine.

No Use Bothering

A N ENGINEER from Sunderland was spending a few days in London with a friend, and after a busy morning sightseeing the Londoner chose a large restaurant for luncheon, thinking it would be a novel experience for the man from the North.

The visitor appeared to enjoy his luncheon, but kept looking in the direction of the door.

"What are you watching?" asked his friend, rather annoyed.

"Well," was the quiet reply, "A's keepin' an eye on ma topcoat."

"Oh, don't bother about that," said the other. "You don't see me watching mine."

"No," observed the guileless engineer, "thee has no call to. It's ten minutes sin thine went."—Philadelphia Ledger.

Diamond Cut Diamond

"I'M AFRAID I'm catching cold," said Kloseman, trying to get some medical advice free. "Every once in a while I feel an itching in my nose, and then I sneeze. What would you do in a case like that, doctor?"

"Well," replied Doctor Sharpe, "I guess I'd sneeze, too."—Philadelphia Press.

Nothing Succeeds Like Success

VERY recently a man not far from here committed suicide because he found himself forced by circumstances to fall back upon farming for earning his living. He preferred to die rather than live so lowly an occupation as farming. One of our city papers thereupon remarked that this man should have read Bolton Hall's famous book, "Three Acres and Liberty," in order to get some idea of how attractive and noble and remunerative the farmer's calling really is.

I don't know about that. Possibly our unfortunate friend has seen something of average farming and of the life of the average farmer, of his unceasing toil and vain endeavors to master the soil and make it yield the increased crops which alone make farming operations remunerative and satisfactory. Perhaps he had observed that, as in other human enterprises, glaring successes are the exception and toil and hardships are the inheritance of the great majority. Perhaps he had realized that Nature had not endowed him with the qualities that would enable him to control average conditions and change them to his advantage, or to find the unusual combination of favorable conditions that would let him forge to the front in this great race for supremacy. If a man chooses to die rather than live the life of some farmers that I know of, I would not greatly blame him.

Begin at the Foot of the Ladder

Altogether I am not at all disposed to call attention to instances of the glaring and glittering successes of some of our princes of the soil, which often match the successes of our merchant princes, for the sake of issuing a general, sweeping invitation to people in the cities who have become dissatisfied with city activities, for one reason or another, to come to the country and take up farming as a means of making an easy and sumptuous living. I am sure the great majority would only jump out of the frying pan into the fire, Bolton Hall's alluring and delusive stories notwithstanding.

I am sure that the chances are always against the man who, having been moderately successful in city activities and become the possessor of a moderate fortune, turns to large-scale farming as an investment, and builds his hopes of great success on the theoretical difference between cost of production of certain farm products and their selling price, and on his superior abilities as a man of business. Usually it requires a good deal more, especially practical knowledge and training and great executive ability, in order to be a successful farmer and king of the soil. Where would "Peach King" Hale be to-day without his matchless perseverance, his undaunted courage and his bulldog tenacity? Note the caliber and the character of the many men in this county and in other parts of western New York whose names have become familiar among fruit growers in all parts of the country, such as Willard Hopkins, Silas Hopkins (president of the Niagara Farmers' Club), W. T. Mann, Albert Wood, Messrs. Nichols, Eighmy, Dutton and many others. The annual income of many of these men from their farm operations runs high into the thousands. In several instances the returns for fruits sold in 1907 reached the thirty thousand dollar or thirty-five thousand dollar mark. All these men, however, began at the foot of the ladder.

The Measure of Success

Yet success is not always measured by the size of the annual income. In this respect Mr. Bolton Hall with his "Three Acres and Liberty" teaches us some important lessons. It is not always the man who runs the largest farm and gets the largest amount of money from his farm operations who is the most successful. I call any man a success who, though his "farm" contains only three acres of land, is wrapped up in his business, has all his thoughts and energies in it, earnestly endeavors to make the most of his opportunities, manages to earn a fair and sufficient competence, and is contented and happy. What more and better can be said of anybody?

Nothing, indeed, succeeds like success. It makes little difference, either, whether this is a three-acre success or a three-hundred-acre success. Even a one-acre success, if full and complete, is more satisfying than a partial three-hundred-acre success. It is the degree of success rather than the bulk of it that makes us happy. The universal tendency to spread, with an idea of reaping the full results from the three hundred acres rather than be satisfied with the safer and surer returns from the three, is the rock on which so many hopes are wrecked. It may be "three acres and liberty," or it may be three hundred acres, bondage and ruin.

I have an acquaintance and former neighbor, a good fellow, a good gardener and good salesman. On a moderate scale he could raise any garden crop successfully, and sell his crops—onions, melons, tomatoes, sweet corn, pickles, roots, etc.—

Farm Notes

in the retail market at good prices and good profits. He had a number of active boys to help him, and the family made a fair living even on rented land. But if he could do that on ten or twenty acres he thought by multiplying his acreage he could correspondingly multiply his net returns and get rich in a few years. Instead of one acre or less of each of his leading crops he planted ten or fifteen of melons, two or three of onions, twelve of tomatoes, a big patch of cucumbers, twenty acres of beans, etc. He had to run in debt for seed, for tools, for fertilizers, for labor. He could not keep up with the work. He ran behind with cultivation, as he did with his payments. The weeds choked out his onions, and flourished in his melon, bean and tomato fields. He did not have half help enough to gather and market his crops of pickles, melons, tomatoes and sweet corn. The boys lost hope and courage, and finally left home to work for wages elsewhere.

Here was a man well equipped for a full success on a moderate scale—for three acres (or even thirty acres) and liberty. Half an acre in onions, half an acre or an acre in strawberries, an acre in lettuce, radishes, beets, carrots, turnips, kohlrabi and other close-planted stuff, an acre of melons, another of cucumbers, some peas, tomatoes and things of that kind, all on a moderate scale, would have given to this man and his boys plenty of congenial work and fair returns, with a chance to lay up something for a rainy day or to get a start in buying a home, kept the boys happy, contented and on the farm, satisfied with the success achieved and with the bright outlook for the future. It was not to be. The attempt to spread, the play for a big stake, spoiled it all. Instead of liberty it was ruin.

I might show you two pictures from my home grounds—one a half acre of strawberries, hurriedly planted late in the season, in poorly prepared, rather weedy ground, plants scattering, half or wholly hidden in weeds, and the whole patch poorer in appearance and poorer in yield and general results than the average patch of the average grower, and generally unsatisfactory; the other a small patch planted "just for family use," good plants planted in early spring in a rich, clean garden spot, kept under good cultivation and free from weeds, a full stand of plants, mulched between the rows, the ground, in season, red with the luscious berries, and altogether a sight that makes us feel good every time we see it. This is success, encouraging, alluring, satisfying, and cementing the affections of every member of the family firmly to the home. The other is just the reverse, discouraging and disheartening. No matter how small the scale, nothing succeeds like success.

T. GREINER.

The Farmer's Course of Study

A YOUNG man from town not long ago said to an old man for whom he had been working a few months:

"I think I have mastered this work. I believe I could run a farm of my own now."

"Run a farm, could you?" came back the answer from the old man. "I believe you could, too. You could run it into the ground! Say, let me tell you I have been working on the farm for more than forty years, and I am learning new things every day!"

Something new every day. It is a fact that a lifetime is needed to complete the farmer's course of study. It begins with the little fellow who does errands for father and mother, and ends only when the last bell rings and the door swings open to the great Higher School.

Far too often the idea prevails that farming is a dull kind of business, in which any one may engage successfully. Those who believe this think that all the preparation necessary to fit one for the work is to get a pair of overalls, a broad-brimmed hat and a span of horses. It would be a revelation to the man who holds this opinion to follow a real farmer through just one year of actual work.

Before he knows it, the chore boy is promoted to the grade where life is far more strenuous. Not that there are no longer chores to do; these will always come to the man on the farm, just as they do in the parish of the preacher. It is a great day for the farmer boy when father says, "Now, my boy, you may take the team and mow the east meadow today. Be careful. See that the harness is all right. Keep the mower well oiled. Watch the corners, and don't be in too big a hurry."

No king ever steps higher than the boy does that day. Now he is a man,

doing a man's work. Still, there are many things he must learn. The mastery of a mowing machine is a thing that not every farmer accomplishes in his lifetime.

It is but a step from the mower to the reaper and binder. Here the machinery becomes more complicated. Every nerve must be tuned to a high key to properly manage a modern binder. To know when it is doing its work properly; to make every step count; to understand how much man and team should do in a given length of time—these are things that call for no small degree of good judgment.

As he progresses, the farmer boy comes to a study of the soil of his father's farm. Here he has a need of actual knowledge of basic elements that would cause a city man to stand back in surprise. What part of the farm is best adapted to the cultivation of corn? Where will potatoes do the best? Where shall the orchard be located? What part shall be devoted to the family garden? Upon which part of the farm shall we pasture the cows, the sheep or the horses? To know all these things calls for a knowledge that cannot be mastered in a day. Happy the lad who has a father who is able to give his boy the required information, for upon the manner in which he completes this part of his work in great measure depends his success as a farmer.

The Benefits of Special Study

Nor is this all. To be able to choose a good cow or a horse that can always be depended upon; to know what particular breeds of cattle are best adapted to the various kinds of farming and most thoroughly fitted for one's particular locality; to know how to care for the different farm animals to the best possible advantage; to dispose of the various kinds of farm produce most profitably—these are matters of the highest importance in the farm economy.

Take the branch of fruit culture alone. The choice of the ground for this purpose, and its preparation for the different kinds of trees; the selection of the varieties that will be most likely to do best in a certain section of the country; to set these trees out so that they will live, and to care for them until they come to maturity, are matters that may well demand the most careful study. A whole life might be spent here and still something be left unlearned in the end. Few men can be said really to have understood the art of fruit culture.

The use of farm tools affords an opportunity for long study. To be able to use saws, augers, chisels and other kinds of carpenter tools is a profession of itself. Let the man who thinks this may be easily learned try to bore a straight hole through a stick of timber or to make a true mortise, and see if he does not learn something about his own ability.

The sowing of grain, the work of properly fitting the soil for the different crops, the cultivation of these crops after they have begun to appear, and the harvesting of them all in season—these constitute only a small part of a farmer's education. The care of poultry has come to be one of the most important branches of modern farming. Some of the most successful poultrymen of the country are on suburban farms. By no means all the authorities on poultry are specialists in town. Thousands of farmers' wives can give their neighbors, who claim to be at the top of their profession, valuable pointers in poultry.

Farming is coming to be a more and more exacting profession every year. Competition between the different parts of the country has developed a new agriculture in the United States. Conditions are constantly changing. New problems are all the time arising. We are coming to see that to win on the farm a man must have a university education which shall include almost every department of knowledge.

There is, moreover, no more fascinating work in all the round of industry than farming. Look at Burbank, the wizard of fruits and flowers. Think of the great things he is accomplishing. The same devotion is needed in every branch of farm industry at the present time if one would do anything that is really worth while. Of average farmers there are still many everywhere; this will always be true, but there are not as many as there were once. The number proportionately is all the time decreasing. This must be true, for there is little prospect for the man who is not willing to study hard and intelligently not for a year or two, but all his life long. For those who can and will do this, the returns in money, in happiness and in usefulness never were more certain than they are to-day.

E. L. VINCENT.

Farm and Fireside, July 25, 1908



POTASH

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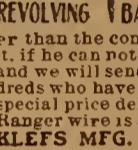


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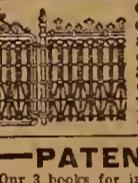
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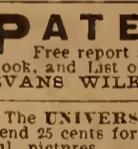
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The Arid-Land Problem of the United States

By Guy L. Noble



Scene in Custer County, Montana. Sage Brush and Grass Crops Grow Without Irrigation

WITH the greatly increasing population of this country and the westward march of civilization people have had their attention called to the development of the semi-arid lands of the great West. This vast region, a large portion of which cannot be irrigated, extends westward from central North Dakota and South Dakota, western Nebraska and eastern Colorado and Arizona to the Cascades, and ranges in latitude the breadth of the United States.

Rainfall, Soils and Seasons

The rainfall in this region varies from twelve to eighteen inches annually, the dryer states being Wyoming, Idaho, Utah and western North Dakota. This lack of moisture requires that any land in this region which cannot be irrigated must be "dry farmed"—that is, farmed with an annual precipitation of eighteen inches or less.

The soils of the dry areas are for the most part light and fine, and in some cases are sandy. Despite this fact, however, the soils contain an abundant supply of plant food and are capable of supporting a good growth of native vegetation. Abounding in the natural vegetation, sage brush, bunch grass and grease wood are among the larger plants.

The seasons are reasonably long in any part of the arid region, being long enough to mature crops even in northern Montana. The length and temperature of the season does not depend alone upon the latitude, but upon the locality as well, for mountains, valleys and different alti-

tudes cause great variations in neighboring localities.

Sufficient moisture during the growing season, a fertile soil and a fair length of season are the conditions necessary to grow a good crop. All of these conditions are present in the arid region, with the exception of moisture.

Conserving Moisture in the Soil

To remedy this deficiency the process of summer fallowing is practised. This is simply plowing the land and letting it lie idle every other year, or one year in three, so that two years' moisture may be conserved in the soil to produce one crop. Because the ground is very hard in the fall, and therefore difficult to plow, there has been a tendency to plow for fallow in the spring. This should not be done, as there is a difference of moisture in the fall-plowed ground equal to nearly six months' rainfall over the amount retained in a spring-plowed piece. To conserve the most moisture the ground should be plowed from six to eight inches deep immediately after the crop has been removed. In order to help in the conservation of moisture the fallow should be cultivated after every rain or whenever the soil becomes baked or crusted. A harrow is generally used for this work, although it does not give complete satisfaction. What is wanted is a machine which will produce a good dust mulch and at the same time rid the soil of weeds. It is often a good plan to roll the ground, but a solid roller is not always advisable, as it makes the mulch

too fine, and a strong wind would be likely to carry the light dust away. The rolling prevents aeration, but should be followed by harrowing, to prevent the transpiration of moisture. As moisture will pass through a dust mulch very slowly, harrowing should commence in the early spring and be kept up regularly, because upon the amount of moisture conserved depends the success or failure of the next year's crop.

Culture of Grain Crops

The West is primarily a grain country, both spring and winter grains being well adapted to this region. No definite time can be laid down for the sowing of crops. One must judge from the local conditions. With spring grains it is the rule to sow as early as possible in the spring, so that the grain can do most of its growing during the early months, while there is some rainfall and considerable moisture in the ground. This will give the grain a chance to mature before the dry months come, and will prevent shriveling, thus insuring a larger yield. Thin seeding should be practised in all cases, for if it is not, most of the moisture will be used in producing stems and leaves and there will not be enough left to mature the kernels. In such a case the kernels will shrivel very badly, and a poor crop will result.

A drill should be used for seeding, and if the fallow has been properly cared for, no preliminary operations are required before drilling commences. A drill is best because less seed is required, and the

seeds are placed at the moisture level and at a more uniform depth, and therefore the crop will ripen more uniformly.

Careful plowing, harrowing and seeding will not always produce a good yield, because the time will come when the Western lands, if not properly cared for, will lose in fertility in just the same way that other lands have. History has shown us that the soils of New England, Virginia and other Eastern states have been greatly depleted by improper care, and even in Minnesota the soil will not produce as it once did, because of the raising of wheat continually year after year.

Lack of Nitrogen in Some Soils

Nitrogen is the principal element that will be lacking in the Western lands, as these lands are rich in other forms of plant food. By growing some nitrogen-gathering crop, such as alfalfa, and by keeping some stock, such as horses and hogs, and using the manure on the farm, the soil can be kept in fertile condition.

The fact that legumes can be grown in the West is important, because legumes have the power of gathering nitrogen from the air and storing it in the roots, stems and leaves. When these plants are plowed under and are decayed the soil is enriched with nitrogen.

Alfalfa, our most important legume, has been successfully grown in some parts of the West for the last fifteen years without irrigation. It is possible that there are some portions of the West in which alfalfa would be a failure, but there

Three Mighty Good Stories in This Number

are certainly many places that it could be grown where it is practically unknown.

Methods of Starting Alfalfa

Different methods are used to start alfalfa, but in actual practise in the West the following method has given the best results: Summer fallow a piece of used land; sow early in the spring to the amount of four to eight pounds to the acre; use a press drill set to a depth of about three inches; do not use a nurse crop; take no hay from the field the first year, but cut the crop back when it is from six to ten inches high; the next spring the field should be harrowed thoroughly; the third spring disk the alfalfa. Crops may be gathered commencing with the second year. Alfalfa goes well in a long rotation, and by sowing but a part of the farm at a time, the land will be kept in good condition. Some farmers have practised letting the crop dry out when it gets well started. This method cannot be recommended, for although some plant food and humus are added to the soil, the supply of nitrogen is not increased, because the nitrogen-gathering nodules do not form in the early life of the plant. Every arid farmer should know how to grow alfalfa if he covets lasting success.

Often a summer fallow is badly infested with weeds. If this is the case it is just as well to have some cultivated crop on the ground, as the crop will absorb no more moisture than the weeds. Corn has been grown in Utah, the only place where it has been tried to any extent. Potatoes also yield quite well, and Kafir corn is a good drought resister. In this way the fallow will be constantly cultivated, and a crop raised besides.

If alfalfa and corn are raised, besides the small grains, the keeping of some stock, such as hogs and horses, is comparatively easy. Alfalfa and corn make

nearly a balanced ration, and alfalfa hay alone makes excellent feed for growing hogs and cattle because of its large per cent of bone and muscle building food. If stock is kept, the manure can be saved and used on the soil to help in maintaining the soil fertility. All of the above methods should be practised to obtain the best grain crop, which is the most important crop in these regions.

Wheat Crop Heads the List

At present wheat heads the list in importance, perhaps because it demands a good price and a fair yield is obtained. Fall varieties do the best and are the most popular. Some wheats are not as desirable as others for milling purposes. Among these are Gold Coin and Red Clawson, although they are grown quite extensively by some farmers. Bluestem is a good spring wheat, and Jones' Winter Fife and Turkey Red are good fall wheats. Millers prefer Turkey Red to any other variety because it is a harder wheat. Turkey Red has been known to produce 32.9 bushels to the acre in dry belts, a record which equals that of any other variety. Farmers should grow the best milling varieties and get the top prices for their product. Arid-land wheat is naturally much harder than other wheats, and hence better for milling purposes. This fact is proved in that flour made from eastern Washington wheat took first prize at the St. Louis Exposition in 1904. The price for such wheat is always good, and it rarely, if ever, falls below fifty cents a bushel.

Oats is not yet an important crop in semi-arid regions, perhaps because the oat crop requires more moisture during the growing season than do other grain crops. Oats have been grown with considerable success, however, and make excellent horse feed, as every one knows.

Barley, flax and emmer are grains prac-

tically unknown in most semi-arid districts, although all have been tried and have proved a success. When farmers obtain a more thorough knowledge of these grains they will be used more and more. Both barley and emmer are exceptionally good grains for feeding purposes. Emmer is a very hardy grain, often improperly called "speltz." This grain will stand more extreme conditions than will other grains, because of its thicker covering, which protects it from the cold, and also because of its drought-resisting qualities.

Western Methods of Harvesting

There are three methods of harvesting Western grain. The binder is used some and the same methods followed as in the East. The header is more common. This machine, which is pushed by six horses, takes a fourteen or sixteen foot cut, and the heads are elevated into a wide, solid-bottomed wagon box called a "header bed." The heads are either stacked or thrashed immediately. Three "header beds" are generally required to keep one header busy. The combined harvester and thrasher is a still more modern machine. These machines, found mostly in the Pacific states, consist of a header and separator and are pulled by thirty head of horses or a traction engine. Five men can operate a machine and from twenty to thirty acres can be cut, thrashed and sacked in one day. The sacks are dumped in windrows as bundles are dumped with a binder. These machines are great labor savers. The objections to them are that they require high power and cost considerable. Inventors are now working to put out a small machine which will take but a small cut and which can be operated by six horses and two men. If such a machine is invented each farmer can own his own harvester, instead of going into partnership with others, as is now done.

Such machines can be used only in semi-arid regions, where there is no rain or dew during the harvest season.

The opportunities in this western country are nothing short of stupendous. Mr. J. W. Powell, director of the United States Geological Survey, estimates the amount of arid land at one billion acres. One hundred and twenty million acres can be irrigated when all of the available water is used. In 1890, however, only six million acres were irrigated. Suppose we grant that in a comparatively short time all irrigation projects be completed, so that one hundred and twenty million acres receive water by artificial means. Even then there will remain eight hundred and eighty million acres which must be "dry farmed!"

Why Farm the Arid Lands?

But perhaps some one may ask, "Why farm these arid regions? Have we not enough rich land elsewhere?" The population of the United States has increased from 38,500,000 in 1870 to 82,000,000 in 1908, an increase of from ten inhabitants to twenty-three inhabitants to the square mile in the last thirty-eight years, or two hundred and thirty per cent.

If the population increases as fast during the next thirty-eight years as it has during the last thirty-eight there will be an average of forty-six people to the square mile by 1946. This immense population must have food stuffs; it must have area in which to expand, and the West is where the people are going.

Undoubtedly some lands are more desirable than others; some localities have warmer climates than others, and the yearly rainfall varies in the different sections, but it is a fact that most of the land is quite fertile. There are millions of acres which will produce just as good crops as many of the Western farms now under profitable cultivation.



A Homesteader's Outfit Going to the Front in Montana



Putting in Stack a Third Cutting of Alfalfa in Montana

The Clover-Seed Crop

Advice About Growing and Harvesting

CLOVER is a great and important crop, and we would like to see more of it growing on every farm. There are but few farmers who fully know the value of clover. When we see more clover growing it is an indication of good management on the farm. We know of one man who moved on a worn-out farm, and the first thing which he did was to borrow money with which to buy clover seed; but in a few years he did not have to borrow the money, for with this management he had all the money of his own that he needed.

We must grow clover in the rotation, no matter whether we buy the seed or raise it. If we can so arrange it, it will be found most satisfactory to grow our own seed. It will be better, for many reasons. First, if we grow it, we know just what kind of seed it is, and bring no new foreign weeds onto our farms. We can grow it just as cheap and possibly cheaper than we can buy it. But the main reason is that we will sow more of it if we have it, while if we had to buy we would do without most times when it is higher in price than we feel we can afford to pay.

Cut the first crop for hay. I cut it early, for two reasons. In the first place, it makes a better quality of hay, it is more palatable, and then it gives the second or seed crop more time to mature, and two weeks' difference in this makes much more value in the crop.

Cut the seed crop when the heads are almost ripe, but do not wait until too late. I mow with a mowing machine, and follow right after the mower and put into small windrows. I let it cure in this,

and remain thus if I can get to thrash soon; but if we have to wait very long, it will be better to bunch it in small shocks. It is then ready to thrash any time—that it is dry. Haul to the huller as you would hay, and do not feed the machine too fast. Most all thrashers have self feeders. Feed in small bunches and evenly and you will get more seed if it does take a little more time. If desired, it may be stacked any time after it is dry, but I do not know that this is necessary. Sometimes we want to get the crop off the land, and then it may be stacked.

When you have thrashed, do not haul the seed to town until you have saved out a plenty for your own use. Keep enough on hand, for you may not have any next season. Do not be in a hurry about selling. Do not think that it is too expensive to keep. There are some things which I had rather sell and let the other man pay the price, but not so with clover, for it is too much of a necessity on the farm. You cannot afford to do without it at any price.

The thrashed straw is not worth anything for feed, but it has a valuable use. I believe in using bedding liberally for all stock, and this thrashed clover straw makes the very best of material for bedding. The stems are dry and short and make the manure handle easily. They are short and open and will absorb much of the liquid manure. Do not give it to the other man to get out of the way, but use in the stable, as bedding for horses and other live stock, and you will get much clover seed scattered over your land in it.

E. J. WATERSTRIPE.

The Insects of the Farm

They Are Beneficial as Well as Harmful

WE FIND many kinds of living creatures about the farm and in the woods. All of these are of interest to us, on account of their ways of living—some being of use and others of harm. To know something about them is of importance to the farmer, as well as to all other persons who cultivate the ground for the purpose of growing different kinds of plants.

Some of the most useful insects are the bees, wasps, ichneumon flies, flesh flies, dragon flies, tiger beetles, burying beetles, ladybirds and silkworms. All of these, and many others, live in such a manner as to help us in many ways.

The bees, of which there are a great many kinds, spend much of their time in visiting flowers, where they gather honey for themselves and pollen for their young. While doing this they carry the pollen, or yellow dust, from one flower to another, and without knowing it, do just the very thing that must be done before there can be fruit or seeds.

Flesh flies, dragon flies and scavenger insects are of good use. Can you answer the question, "What good are flies?" Let us see. When an animal dies, or a piece of meat decays, large numbers of flies gather about it. In a short time they lay their eggs upon it, or "blow" it, as we sometimes say, and soon maggots appear in large numbers and eat it up. Some flies have a habit of laying their eggs upon the bodies of caterpillars, grasshoppers and plant lice. These eggs soon produce maggots, which soon cause the death of their victim.

Perhaps the most important insects that

do damage in the West year after year are the ones we call "short-horned" grasshoppers. They are more or less affected by the weather, and that is why we see them more plentiful in some years than in others. Each of these insects eats fully as much food in a day as its own weight, and often a great deal more. So when there are a great many in one place they do much damage.

Plants, like animals, are often bothered by lice. The aphids, green flies, or true plant lice, form a very interesting family of insects. They are among the most rapid multipliers in the world. They settle themselves on leaves and stems, and often cause the leaves to curl up, thus forming a protection for themselves. They do a great deal of harm, and we must spray the plants with soapsuds, kerosene emulsion, whale-oil soap and other remedies.

The butterflies look very beautiful to us, and in fact do little harm. It is the worms that are hatched from their eggs that do the mischief. The butterfly is responsible for the cutworms, army worms, tent caterpillars, cabbage worms and apple worms. Some of the fore named are caused from the moth, which is nearly the same as the butterfly. Some of these pests can be gotten rid of by spraying, others by fires in stubble fields, and in small gardens we can pick them by hand and later burn or crush them.

The useful kind of mites will be found on the wings of grasshoppers. The harmful ones attack our domestic animals or work on the leaves of plants.

L. C. KUHLMAN.

Around the Farm

Items of Interest and Value to the Progressive Farmer

Seeding to Grass in the Fall

THE grass crop of this country is an important one, and is getting more so each year, both as meadow and pasture. In those countries where land is worth several hundred dollars an acre they have their pastures, and must have them, and we in this country need not think about land being high in value for grass yet a while.

As land values get higher we have to study to make our lands produce more in all crops. True, our land is too high for some of the crops of grass, but we as farmers must make the soil more productive.

When we ask which is the best time to seed to grass, why not do a little thinking and consider a little? The fall is the time of the year when Nature seeds. If we watch the timothy, for instance, when does the seed fall to the ground? It will be soon after harvest in the early fall, and I think it is the best time, for Nature knows more than man.

I believe we should help Nature in every way we can if we would have best results. If Nature lets the seed fall in the fall of the year, we can help by having a good seed bed ready for the seed to fall into, and the way to do this is to have the seed bed ready when the seed falls or when we sow it. Have a place where it can gain root and have moisture. We find it the best and surest way to sow the seed on a well-prepared seed bed in early fall, and cover it lightly.

A good way is to plow after the oats are taken off, and get the ground ready for seeding in early fall. In this way we plow under a lot of weeds, which we destroy and which would otherwise go to seed, and also stubble, both of which add to the soil humus. We destroy the weeds and put them where they benefit the land. Plow as soon as possible after the oats are taken off, cultivate occasionally, and sow the seed the last of August or the first of September.

Some have fair luck by seeding in corn at the last cultivation, but I do not think much of this plan; however, it is an extra good plan to seed after the corn is cut off. I have tried this with good success, and think it the very best way. The surface soil has had a good cultivation, and now, after we take off the corn, we disk it once and harrow once or twice, and thus give the seed the best chance.

The best crop of new meadow I ever saw was a field treated in this way, and a very heavy crop of hay was harvested the next summer. I have good luck in seeding after millet. Some say that millet ruins the land, but I have sowed seed after millet was taken off, and harrowed it lightly a couple of times to cover, and have had the best kind of a meadow for a number of years.

E. J. WATERSTRIPE.

Recreations and Risks

"NOBODY can walk beneath palms without paying the penalty." I often think of this saying of a famous writer. "No rose without thorns" expresses the same idea in another form. A curse seems to be attached to every blessing. The same balmy air and stable warmth which clothe fields and meadows in fresh verdure and bloom and make country life so pleasant and enjoyable also multiply the hordes of flies, mosquitoes, worms and bugs as an offset. We who enjoy living along a "water front," boating and sailing and fishing, and the cool breezes in mid-summer as they come across the lake or river, or from the sea, also face the dangers and liability of losses that are inseparably connected with the close neighborhood of deep waters.

A sheet of water is the great charm of the rural landscape, and one of the most irresistible attractions of rural life, and many who live at a distance from it will often go many miles to have the privilege of visiting the water and enjoying water associations and pleasures. But in the midst of life there is death, and dangers beset us everywhere. A few evenings ago two of our young people—a newly married couple—were enjoying a canoe ride on the little creek which passes along only a few rods distant from our residence, as many have done day after day. Accidentally the frail craft was upset, and the young woman went down to her death. Help arrived in time to save the young man's life.

Such accidents happen every day. Shall we shun the water on that account, and deprive our children of all water privileges—the greatest charms of rural life

during the summer? We cannot hope to protect them from all dangers, but we can teach them how to swim, how to avoid unnecessary risks, and generally how to take care of themselves. Every boy and every girl living within easy reach of water, even if it is not over a few feet in depth, should learn how to swim. It is easy. Most of the boys and many girls in this vicinity will learn it by themselves and without efforts on the part of any one to teach them; but in any case a very few lessons are sufficient. Good swimmers sometimes drown, but in case of accident they have at least a chance to save themselves; and perhaps to save others.

Sailing is a most exciting and exhilarating pastime, but on our treacherous waters it is very dangerous. No person not a good swimmer, and not expert in the handling of a sailboat, should attempt to sail these waters in a frail craft unless accompanied by a person who can be trusted—and then it is risky—and no one not a swimmer and perfectly familiar with all the peculiarities of a canoe should be found inside of one of these unsafe things on deep water. But people like to take risks, necessary or unnecessary, and to expose themselves to dangers of various kinds. There are cases where we have to do it. We should not do it for mere fun. It is not necessary to place guns into our children's hands, or allow them to have cannon crackers, toy pistols and the like for the use of which there is neither sense nor reason. Noise is not recreation; disorder not fun or pastime. We may teach our children the nature and use of firearms, as we do of any other machinery and device, but we should not allow them to go around like living arsenals.

We can find plenty of fun and recreation in country life without exposing ourselves to great dangers; but let our young people get acquainted with the possible dangers wherever they are, and know how to meet them. In spite of all warnings, however, children and fools will tempt fate. They will get into canoes, they will pick up the big cracker to see whether the fuse is still burning, they will rock the boat, they will sail, they will point the gun "that isn't loaded" toward people, and pull the trigger, and do many other foolish things, and accidents will happen in city and country.

T. GREINER.

Out of the Old Swamp

WHEN we were boys, down back of the little old schoolhouse we attended winters there was a swamp. At most seasons of the year water stood there. Trees and logs lay everywhere; and we used to have a great deal of fun at noon time jumping from log to log or from bog to bog through that piece of low land. Many and many a time have I lost my footing on these ventures and wet my feet so that they were as "wet as sop" all the rest of the day. The wonder is that we did not all of us catch our death of cold. So far as receiving any returns from that piece of land is concerned, the owner never dreamed of such a thing. He just looked on the swamp as so much waste land, a thing to be plowed and mowed around as long as he lived.

But a new man has come to that farm since then—and with him have come new ideas about the value of land—so that the other day I learned that that old swamp had been turned into a garden spot on which the finest stuff was being raised. No part of the farm to-day brings in a greater profit, in proportion to the extent of land worked, than this same old swamp.

Yesterday I was talking with a gentleman from the bureau of soils of the national government. I was much interested in one thing he told me. He said:

"I am here to-day to look at a piece of land about six miles from your city. The owner wrote to us describing the land, and asking what he could do to make it profitable. I have been to the place. I found a low piece of ground, comprising some three acres of land. In that sag there is a body of muck no one knows how deep. As it stands now, the spot is tillable, the season being dry just now. Of course in a wet time the water table would be higher, so that it could not be tilled; but the bit of ground can be easily drained. I told the owner how he could do it; and if he carries out my plans he can without doubt make a hundred dollars a year from every acre there by growing celery. He is on the line

of an electric road that can bring his stuff to market every day, so that the work of marketing is comparatively little. You see, he has a little fortune in that swampy place, and never knew it until now."

It is a fine thing that our government is taking all this pains to help farmers to get better acquainted with their own farms and learn how to make more out of them. There are almost boundless possibilities here, and is it not just what should be done? It has taken us a long time to find this out, however.

But this is not just the point I have in mind now. On how many of our farms are there places now lying waste, producing little, if anything, that is worth while! By a little study and labor these now idle pieces of land may be made to bring in splendid returns. And we do need this added source of income, most of us!

If we have not swamps, we may have tracts of land that might well be set out to trees. True, in our day we might never get anything back from this forestry experiment. Some one else surely would. Or we may have bits of land that now seem to us worn out and past their day. These may be brought back by the right kind of cultivation.

We are living in a great day when the old swamps and the rough places may be made to yield a rich harvest of gold.

E. L. VINCENT.

Seeding to Grass After Corn

F. W. H., Lancaster County, Pennsylvania, writes:

"I have a piece of land sloping toward the west which I would like to get into grass without seeding into grain. It is in corn now. How could I do it? Could alfalfa be sowed in it this fall and a crop cut next summer? Please advise me as to the best plan."

It is perfectly feasible to put this land into grass without seeding it to grain, but it is not always easy to get a good stand immediately following corn. After the corn comes off is too late for best results. Probably the best thing for our correspondent to do, if he is particularly desirous of seeding it this year, is to sow the seed at the last cultivation, preferably working it in with a light spike-tooth cultivator. I have seen excellent stands of grass secured in this way, though there is likely to be a streak where each row of corn stood that is not well seeded. I remember one such piece in particular which lay directly in front of my office window in Rhode Island, and the position of the corn rows could still be distinctly seen the second year the field was in grass. This, however, did not prevent a good yield of grass being secured.

Whether alfalfa can be made to succeed in this way is doubtful. In favorable localities, where alfalfa succeeds well anyway, and the land is well inoculated with the bacteria which form the nodules on the roots, a stand might be obtained, but under average conditions I should expect it to fail. If alfalfa is to be tried, a much safer way would be to sow rye in the corn or after it comes off, cut this early or turn it under in spring, then keep the ground well worked until about August 1st, and then sow the alfalfa alone.

FRED W. CARD.

Preparing for Fall Wheat

THE soil on our farm is well adapted to the growing of fall wheat. It is largely a sandy loam and is usually good for an average of forty bushels to the acre. To insure a probability of success it is essential that the various stages of preparation should be thoroughly and intelligently carried out. To obtain the best results some definite system of rotation should be followed. We seek to follow a three years' course, making clover the foundation crop, to be followed by corn, roots and fall wheat, and seed again to clover the following season with the oat and barley crops.

The preparation of a seed bed is a factor of no little importance. After harvesting the clover crop we plow that portion of the clover stubble intended for fall wheat. This should be plowed quite shallow, and as soon as practicable after the previous crop has been removed. The roller is then used, followed by the disk harrow and the iron harrow, frequent surface cultivation being given. There are three reasons for the latter operation—the conserving of moisture, the liberation of plant food and the germination of weed seeds. The old practise of plowing the ground two or three times has, in my

opinion, but little to recommend it. Frequent plowing makes the subsoil too loose and open, so that it becomes more or less saturated with water, which, by heaving and thawing in winter, heaves the plants and kills them. Also in times of drought the soil dries out very quickly, with serious injury to the crop. The ideal seed bed is pulverized merely at the surface, and is compact below, the roots thus coming in contact with the solid earth, which holds the moisture much more readily and is in a position to assimilate the available plant food, and so enable the plant to make an early and rapid growth. Moreover, the grain does not lodge so easily, and if desired, a better stand of grass seed may be obtained.

The time for sowing depends largely on circumstances. When sown very early there is danger of too rank and succulent a growth, especially on rich land. Therefore, as a rule, seeding may safely be done on poorer soil somewhat earlier. Early sown wheat, however, being subject to attack from hessian fly, we prefer to wait until after a slight frost. Generally from the first to the twentieth of September we find to be the best time in this locality (Ontario, Canada).

The quantity of wheat sown to the acre depends chiefly on the character of the soil, the size of the grains and the time of sowing. With Dawson's Golden Chaff, which has given us the best results, one and one half to two bushels are sufficient, and as a rule this will hold good with most varieties, other things being equal. Our experience shows that on rich soils less seed will do than on poor soils, as a thick seeding will tend to increase lodging. With fewer plants they grow naturally, the sun gets in more, the straw is heavier and the plants healthier. If sown thickly it tillers little and produces few heads to the plant. When sown thinly it stools more and the heads are larger, often enough to counterbalance the thin seeding. If a variety having small grains is sown, less seed is required. Also, when sown early a smaller quantity will do, as each plant will have time to grow larger and will stool out and cover more ground.

A judicious selection and grading of seed wheat will work wonders in obtaining a large yield. Our method is to exercise care in securing the seed from that part of the crop that has given the most satisfactory returns. This is done by storing a load or two where it can be especially set apart for seed; then by making a free use of the fanning mill a choice sample is easily obtained.

In recent years we have found it advantageous to treat winter wheat to be used for seed purposes, to kill the stinking smut. A treatment which has proven very cheap, simple and effective is the immersion of the seed wheat for twenty minutes in a solution made by adding one pint of formaldehyde (formalin) to forty-two gallons of water. Afterward the grain is spread out and stirred occasionally until dry enough to sow.

Regarding our method of sowing, I may say we have adopted the practise of drilling in preference to broadcasting. The wheat is sown at a more even depth, is better covered and more uniformly distributed. Aside from this, we believe it to be less easily winter killed by freezing or heaving, for the reason that the small furrows made by the drill aid in preventing the snow from being blown away, thus retaining a sufficient covering to largely modify the temperature of the soil.

J. HUGH MCKENNEY.

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Review of the Farm Press

What Others Are Saying About Important Farm Matters

Physical Condition of Clover-Rotated Soil

WE HAVE had a great deal to say in the past few years about the physical condition of the soil and its effect on crops. To put them in remembrance of our teachings on this important point, we wish farmers who have plowed up clover sods to put in corn to notice the difference in the effect of heavy rains on the physical condition of these soils and on soils of similar lands on the same farm or on other farms that have been cropped in corn and grains for a number of years past.

They will find that on these lands that have not been properly rotated the soil is badly run together, the growth of small grain is short, much shorter than would be expected with the rainfall of the season. They will find in the corn on corn lands the soil is run together and baked, while on lands that are in corn on clover sod they will find the physical condition very good—much better, in fact, than could be expected in a year with such torrential rainfalls as we have had this year.

Why is this? Because the clover sod has kept the soil well supplied with humus. The humus has absorbed the water and is holding it to give it out in a dry time, which will surely come before the corn crop is harvested. This partially decomposed vegetable matter has held the soil particles apart, has prevented it becoming puddled and pasty, has permitted proper aeration, has given the conditions necessary to the rapid growth for whatever may be planted upon it.

Were it not for the humus in our soils, they would, while not becoming exhausted, nevertheless be in such physical condition that they would not yield a profit-giving crop. Any system of farming which does not keep up this humus supply is condemned by all authorities and by every good farmer who has had any experience and observation of the better way.

The only way to keep up the humus supply is to grow it in the shape of grass, supplementing it by the manure that is produced on the farm. Therefore, whatever else you do in planning for the future, plan for maintaining the humus supply, and thus keep your soils in such physical condition that no matter what the season may be, they will produce a fair crop.—Wallaces' Farmer.

Sticking to One's Last

WHEN we were children in school we were all told more or less often that "perseverance conquers all things," or words to that effect. It is just as true as it is hackneyed, and is as true in farming operations as anywhere else.

Many farmers have improvements on their farms adapted to certain kinds of farming and live-stock raising. One man, for instance, has for years devoted his attention chiefly to swine. Most of his improvements during that period have been with a view to breeding and feeding hogs. His general scheme of farming has been along that line. He is supposed to know more about hogs than about any other kind of live stock.

But hog raising has its discouragements, like everything else on the farm or off of it. The cholera visits the herd. Prices for hogs take a decided slump, while at the same time prices for cattle are soaring. Or this farmer just naturally gets tired of hogs, and seeing that his neighbor, who makes a specialty of some other kind of farming, is getting along faster than he on the prosperity road, he decides to make a change.

And right here, in nearly every case, he makes a mistake. His improvements, no matter how good, are not suited to some other line, and he must invest a good deal of money in changes. The initial investment in some other live stock is considerable. If he drops hogs for cattle because hogs are low and cattle high he may find the reverse to be true within twelve months. He has accumulated considerable knowledge and experience regarding hogs, and now he must acquire a new stock of knowledge and experience. If he is a young man, this feature is not so bad. If he has reached middle life, he will find many difficulties in the way.

Of course, in writing this way we are writing somewhat on general principles. In some cases a man may change his scheme of farming to good advantage. If he is doing poor farming or a kind of

farming to which neither he nor his farm is adapted, he ought to change it. But in a great many cases a decided change is an error. Of course, there should be progress on the farm. One cannot go on successfully doing the same things always in the same way, no matter what his business. There is money in hogs. There is money in cattle. The farmer is pretty likely to make a costly mistake who thinks that because he is not succeeding with one he can succeed with the other. Better methods in handling the kind of live stock he now has is more likely to win out in the long run.—*Farmer's Advocate*.

When the Butter Doesn't Come

THERE is always a reason for it when the butter fails to separate after a reasonable amount of churning. There are, in fact, a number of different conditions which may combine to cause the difficulty, or any one alone may do it.

First, all milk is composed of water, casein, fat and other ingredients, these three predominating. When the cow is fresh the proportion of water is greater than at any other time. The fat globules are then larger, and consequently more easily separated in the process of churning, than later on, when the cow becomes nearly dry. During the later period of lactation, too, the milk becomes viscous, or sticky, as the water content diminishes and the minute globules of fat are more easily entangled in it, thereby retarding separation. This, then, is one cause of delayed churning—namely, cows long in lactation. The fresh cow never gives any trouble on that score. The obvious remedy is to dilute the milk with water, which relieves the viscous condition. This may be done in a large herd by the milk of fresh cows being mixed with the other, when difficulty of this nature rarely appears. Or if there is no fresh cow in the herd, the milk may be directly diluted with water, preferably hot, so as to raise the temperature to at least one hundred degrees before setting.

Another cause of delay in churning is attempting to churn unripe cream or cream which is too thin. Properly ripened cream is about as thick as molasses. When a cup is dipped into it a thick coat of cream should adhere to it, and it should be pleasantly acid, free from lumps either of cream or curd, and without any whey in the bottom of the can. This cream if churned at a temperature of sixty to sixty-two degrees in winter ought to come in thirty to forty minutes unless the churn is too full. And right here we come to another source of trouble, one which accounts for many an hour unnecessarily spent at the churn handle.

For best results never fill the churn more than one third full of cream. It swells upon being agitated, and the lessened opportunity for concussion results in a longer time being required to bring the butter than would have been the case with a smaller quantity.

Temperature of cream at time of churning must also be taken into consideration. In winter, when cream is liable to be too cold, it is very easy to get troubled unless a reliable thermometer is depended upon. Jersey cows yield milk with fat exceptionally hard in composition, hence cream from such milk stands a higher degree of heat. Trial should be made of individual herds, and the temperature found to be most satisfactory adhered to. To do this one should have a Babcock test and determine by its use exactly the amount of waste going on. Too high a temperature invariably means loss of butter fat, while too low temperature unnecessarily retards the churning. This point is important.

To sum the matter up, these points should be kept in mind: It is the cream from the stripper, or farrow cow, in nine cases out of ten that makes the trouble when the butter does not come. Thin cream should be avoided and the amount of acidity quite pronounced. Let the amount in the churn be not more than one third of its capacity, and use the thermometer to make sure the cream is sufficiently warm.

It might be added that sometimes conditions of special bacteria at work causing stringiness orropy milk or other disturbances may have an influence and require a special sterilizing treatment for their eradication. In the main, however, the trouble will be found outlined as above.—*Mrs. E. R. Wood in The National Stockman and Farmer*.

Swingletree Injury to Young Trees

THE writer has just returned from a trip of inspection of a young orchard. The call was urgent, but the principal source of trouble proved to be too much swingletree. A careless hired man had succeeded in barking a number of trees in a ten-acre apple orchard, and then in many instances pear blight had gained entrance. The injuries were thus extended.

Some of the trees were dead, but in a majority of instances the blight had died out and the trees were making heroic efforts to heal the wounds. But a wound which extends half way around a trunk is slow in healing, and there is danger of the trunk breaking at that point during wind storms.

The loss of a five-year-old tree is considerable, so the owner was advised to bridge graft over the wounds. This can be easily and quickly done by fitting scions over the wound. One end of the scion is slipped under the healthy bark on the lower edge of the wound and the other end under the bark at the upper edge. Two or three scions will usually be enough for small trees. Both edges of the wound where the scions are inserted should be well protected with grafting wax, and if the wound is small, the entire surface should be covered. This work is done in the spring of the year at the time ordinary grafting is done.

The scions may unite along their entire length when the wounds are fresh, but more often they do not do so, consequently the tree appears to have several trunks as it gets older. Such trees live as long and are as strong as though no injury had ever overtaken them.—*W. Paddock in Colorado Agricultural College News Notes*.

Lice on Hogs

A STOCKMAN new in the hog business bought several sows. He built good shelter and gave them good feed and care. They had one hundred and fifty pigs, and all of these but twelve died before weaning time.

After one hundred and thirty-eight had died, a veterinarian was called in to find what disease was killing the pigs, and he found that they had all been killed by lice. They were covered with vermin.

The writer inspected a herd of three hundred hogs that had the run of an alfalfa field and were also fed grain. They had a greyhound appearance, with rough hair, and were not over half so heavy as they should have been. After looking them over, the writer remarked that the lice were stunting the hogs. The owner insisted that there was not a single louse on the whole herd. Several hogs were caught and were found to be nearly covered with lice.

Instances of this kind are the rule rather than the exception. Whenever a pig has good feed and surroundings and is not thriving, look for lice. Vermin will usually be found to be the cause of the lack of thrift. A great many of the losses laid to cholera, worms and mysterious diseases are actually the work of lice.

The best cure and preventive is regular dipping, using some of the coal-tar dips so extensively advertised and sold. When pigs are found to be lousy, dip twice, ten days apart, and then once a month through the year. Dipping with coal-tar dips not only kills the vermin, but keeps the skin and hair in a healthful condition that is worth the cost of the operation aside from killing the lice.

The most convenient method is to sink a galvanized-iron vat, the top level with the ground, and leave a chute leading from the hog lot to the vat and another from the dipping board to the lot.

The dipping mixture can be kept in the vat all the time and be protected by a cover when hogs are not being dipped. With such an arrangement it is a short and easy job to dip fifty to two hundred hogs. The dipping mixture will need to be changed three or four times a year.

In Colorado it is safe to dip in winter if done on a warm, sunny day and the hogs are kept in the sun and out of the wind until dry.

Where only a few pigs are kept they may be treated by washing them thoroughly with a cloth or sponge wet with the dipping solution.

Besides dipping, the hogs should have short posts set for them in their yards and pastures. Wrap the posts with old

potato or bran sacks, and once a week saturate these sacks with crude oil. A louse bites the hog, he nibs the spot on the sack and the oil kills the louse.

When hogs are found to be lousy, their sleeping, feeding and resting places should be thoroughly cleaned, all bedding burned and these places sprinkled or sponged with the dipping mixtures.

Pregnant sows should not be run through the dipping vat.

When a pure-bred pig is purchased and brought to the farm, it should be examined, and if found lousy, treated before being turned with other swine. There are hundreds of instances of where a single lousy pig sent out by a reputable breeder has in a short time stocked a whole herd with lice.—*H. M. Cottrell in Colorado Agricultural College News Notes*.

Cultivation of Small Grains and Use of Heavy and Light Seed

THE Nebraska Experiment Station has just issued Bulletin No. 104, giving the result of seven years' experiments with the cultivation of small grains, eight years' experiments with the use of heavy and light seed wheat, and three years' experiments with the use of heavy and light seed oats.

Where drilled oats have been cultivated for seven years in comparison with uncultivated drilled oats there has been an average increase in yields of 4.8 bushels to the acre. The cultivation has consisted usually of one to three harrowings given about four to six weeks after sowing. Where oats is to be cultivated it is found much better to drill it than to sow broadcast. For example, during four years drilled oats, both cultivated and uncultivated, was compared with broadcast oats. During the four years the drilled oats gave an average increase of 5.3 bushels to the acre as the result of cultivation, while the broadcast oats actually decreased in yield 1.9 bushels to the acre. This is probably due to the fact that in broadcast oats a large number of plants are either destroyed or injured by cultivation. The cultivation of winter wheat by the use of a harrow or weeder has not given increased yields. The greatest benefits of cultivation, especially with oats, have always been derived during dry years, while in seasons of more than normal rainfall, even with the oats, there has sometimes been an actual decrease in yield from cultivation.

Where the wheat was broadcasted and cultivated, an actual loss amounting to an average of three bushels to the acre has resulted in the four years' experiment. Where the wheat was drilled, the loss amounted to only one half bushel to the acre.

Quite astonishing results have been secured from rolling the winter wheat in the spring, an average increase for four years of 5.1 bushels being secured. The rolling was given soon after frost went out in the spring, and the benefit derived from rolling is believed to be due to the fact that the roller settles the earth firmly about the young wheat roots, causing them to stool and root much better.

For eight years experiments have been conducted comparing the use of heavy seed wheat separated by a fanning mill with light seed wheat and ordinary unseparated seed. The heavy seed has been the heaviest fourth of the crop each year and the light seed the lightest fourth. Two varieties, Turkish Red and Big Frame wheat, have been used in the experiment. There has been no average difference in yield or quality of the crop resulting from the use of heavy or light seed. Similar results have been secured for three years with Kherson oats. The data indicate that where seed wheat or oats has been reasonably cleaned in the thrashing machine no increased yield is to be expected from the further use of the fanning mill in separating the light and heavy grain, although there is an advantage in removing all foreign seed and also all straw and chaff which would prevent the seed from feeding evenly through the drill. This seems to be due to the fact that there is no hereditary difference between the heavy and light grains, as both types come not only from the same plant, but from the same head, and therefore it would be expected that the two kinds are likely to produce the same quality of grain.—*E. G. Montgomery of the Nebraska Experiment Station*.

Gardening

By T. Greiner

Setting Plants

It is not difficult to set plants when you know how. It is quite a job when you don't. Such things as strawberry, tomato, pepper, cabbage and similar plants that are hardly ever set less than two feet apart in the row may be planted out while the operator goes on a slow walk, and with very little bending over to the ground, by means of a sharp spade or the half-moon-shaped sod cutter or edger, which is my favorite tool for the purpose. An opening is made with the spade or sod cutter by thrusting it into the soft ground where the plant is to be set, and the handle of the tool pulled toward the operator. A youngster with a basket of plants meantime has picked out a plant, and inserts the roots into the wedge-like opening back of the blade, holding the plant in proper place until the operator withdraws the blade and sets the heel of his right foot firmly upon the ground close to the plant, thus pressing the soil against the roots and insuring the plant's growth. The whole performance is gone through so quickly that the planter and the boy with the plants really seem to be walking across the field at a slow pace.

When I set celery or other close-planted plants, I get down on one (left) knee, have a small-pointed garden trowel in hand, and the plants strung along the row in about the right numbers. I stab the trowel into the ground and pull the handle toward me, at the same time picking up a plant with the other hand and inserting it behind the blade of the trowel. There I hold it until the trowel is withdrawn. Then I set the heel of the right foot on the soil near the plant, thus firming the roots. Plants thus set are very sure to live if conditions are not too unfavorable otherwise. I can easily set thousands of plants in this manner in a day. Yet how much fuss people sometimes make over setting a few such plants in the home garden!

Vegetable Plants

I always try to raise my own vegetable plants, and while I am about it I always feel that I can just as well raise some of these plants for sale to neighbors. There are always people in the vicinity who want late cabbage plants, celery plants, etc., when it comes time to set such plants in open ground along in June or early July. So I try to be prepared for this call.

In May I sow seed for late cabbage plants, a row or two early in the month, another row or two (and these are rows several hundred feet long) a few days later, and perhaps another row or two, or even more, still later. This gives me a succession of plants, and I can serve people when they come after them, some sooner and some later. I usually sell such plants at twenty cents a hundred. I have to buy half a pound or so of seed, but the plants bring quite a few dollars during the season. And I have my own supply besides.

Celery plants also sell for twenty cents a hundred. They cost less for seed, but are a little more troublesome to raise. I start the seedlings in flats in the greenhouse during February or early March, and transplant them, in sections of row, to the nursery row in open ground when the first true leaves are formed. In this way I never fail to have a full supply of celery plants for myself or any one of the neighbors who wants them at my price, and I have never heard any one kick on the price. I have good plants, and at twenty cents a hundred they pay well for the trouble of raising them.

Green Peas, Early and Late

We have had a full supply of green peas of choice quality. For first early we had a number of newer ones which were very good. Surprise is one of them. The number of pods and the way the peas were crowded in them was certainly a surprise, and a very pleasant one. It is one of those first-early smooth sorts. We now have an improved Alaska, which is larger in pod and pea than the old Alaska, and but a trifle later. I shall discard the old Alaska for this newer one.

For a later pea I have one of the wrinkled class. I used to grow Horsford's Market Garden pea. I find Improved Champion, Dwarf Champion and Thomas Laxton far better, more productive and more reliable. The pods are very large and well filled with enormously large peas of fine quality. I plant a row

or two of these peas every little while during spring and early summer, and we have peas in abundance for ourselves and neighbors during the latter half of June and all of July, and sometimes in August. I can do nothing, however, with the very dwarf sorts. American Wonder never bore enough peas for me to give us a mess. Dwarf Gradus or Laxtonian is not doing any better. None of these weak growers for me!

Raising Strawberries

W. H. L., of Indiana, asks where he can get the best information on raising strawberries. Any standard garden book will give him information on the subject, but "the best" can only be had in the field, by actual practise. See also a grower in your neighborhood who makes a success of this crop. He can tell you how to do it and what varieties are most suitable for your locality and soil conditions. Then select a suitable piece of land, one not particularly weedy. A clean clover sod would be excellent. Plow it, work it, continue working it, and let it go into the winter in clean condition. Plow it again in the spring. Lay it off in rows four feet apart. Get good fresh plants of the variety or varieties selected as most suitable, and plant just as early as the ground is in proper condition. Then cultivate and hoe, keeping the patch free from weeds, and allowing the runners to form a matted row, leaving at least two feet of space between the rows bare. Mulch at the beginning of winter, and you will most likely raise a good crop of good berries.



Niagara Grapes

Salting Asparagus Beds

"Tell Colorado reader to salt his asparagus bed," says a subscriber. "It will kill the weeds, but not hurt the asparagus. I use the brine from the meat barrels for mine. I put it on in early spring, and am never bothered by weeds."

My practise also has been to use such brine on asparagus. Yet my asparagus bed is rather weedy. I will try a copious spraying with a strong solution of iron sulphate (common green copperas).

For the Cabbage Worm

If "Mississippi reader" will spray his cabbages with any of the following—kerosene emulsion, whale-oil soap solution, strong tobacco tea, lime-sulphur wash, or dash them with hot soapsuds, or dust them with tobacco dust or good insect powder (especially buhach)—he will get rid of the worms all right.

Manuring Broadcast or in Hill

This query comes from Connecticut: "Would manuring broadcast before plowing be best, or in the hill? Moles trouble greatly when manure is used in the hill."

It is in very rare cases that I ever think of putting manure in the hill. The best place for plant foods of any kind is in the soil equally distributed. For only one crop—namely, sweet potatoes—have I ever advised hill manuring. We do not care to encourage the vines to strike root all over the ground between the hills, as they are liable to do if the entire surface is very rich. Apply manure broadcast, and work it well into the ground.

Fruit Growing

By Samuel B. Green

Cutting Posts in Summer

W. W. F., Rochester, New York—White-oak posts cut in August or at any time during the summer months are fully as durable as if cut at any other time of the year. In fact, the durability of woods is affected little, if any, by the time of the year in which they are cut, and if any season of the year is to have preference on account of this, it would be the summer season.

In some parts of Europe it is customary to cut broad-leaved trees in summer, and after cutting in, to trim out the tops until the leaves have dried up. In this way a large amount of sap is evaporated, and thus the wood is assisted in curing, and its durability increased.

Time to Gather Ginseng Root

T. J. T., Rushford, Minnesota—As to the best time for cutting ginseng, the "sang" gatherers generally collect the root without regard to season.

In my opinion, the roots would be heaviest and there would be less shrinkage from them if gathered in the latter part of summer or in autumn, when the growth has ceased.

Pure-Food Standard for Wine

A. C. J. W., New Richmond, Ohio—In regard to the standard required under the pure-food law for blackberry and grape wine, I suggest that you write to Doctor Wiley, United States Department of Agriculture, for a copy of that portion of the law that relates to this subject.

after which they are very much reduced in numbers, and perhaps kill out, and we do not see them for a while. By the death of their host plants the parasites have nothing on which to feed, and they die out, and gradually another cycle of serious trouble from them begins.

The foliage of the soft maple which you sent, which has small warty-like excrescences over it, is infested with the larvæ of some gall fly. There is practically no remedy for this, either, and Nature will have to be allowed to take its course, the same as in the case of the twig borer in the box elder; but they are two separate insects that cause these troubles.

Cultivating the Huckleberry

T. F. F., Millport, Alabama—The huckleberry has seldom been successfully cultivated except where the native growth has been thinned out and given a better opportunity than it would have if left to itself. It may be possible, however, for your native huckleberry to do well in your section if transplanted. It naturally grows in a moist place and where it is somewhat shaded, but not in full shade.

I think your best chances of success would be by taking up the plants with a large ball of earth about them this autumn as soon as the plants are dormant. It would improve their chances to have them planted in a mucky soil, such as that in which they are naturally found.

Caring for Acorns and Walnuts

Acorns and walnuts require the same treatment. In order to get them to grow they should be gathered in the autumn and sown in drills about eight feet apart as soon as they fall to the ground. The acorns grow readily, and it is important in the case of the white oak to sow the seed immediately after they have fallen to the ground. As soon as they send out the tap root they do not transplant well.

In the case of the walnuts, if the nuts are covered so deep that they do not freeze in the winter, they will frequently fail to grow in the spring; but in most parts of your state there is little fear but they would be frozen satisfactorily, even if covered with two inches of earth. Where squirrels or gophers are abundant some protection against them must be furnished, or they will cause serious loss. I take it, however, you are informed as to the best methods of protection against these pests. If you will apply to the Secretary of Agriculture, Washington, D. C., for the farmers' bulletins, they will be sent to you without charge, and in them you will find much material of interest.

Varieties of Peonies for Commercial Growing

Mrs. F. R., Bangor, Michigan—In preparing the land for peonies, the soil should be made rich and should have thorough drainage. I think it best to set out the plants in the autumn, preferably before the first of October. However, I have sometimes had good success with spring planting.

I prefer to put the plants in rows about four feet apart, leaving them about three feet apart in the rows. This is further apart than many peony growers think necessary, but I think a good circulation of air about the plants is very desirable, and helps prevent blighting of flowers.

Set the plants about four inches deep, and firm the soil very solid about them. There will be but few blossoms until the third year, although there will be some the second season. The soil should have thorough cultivation throughout the entire season.

As to the best varieties to grow, the most popular ones are the Festiva maxima, L'Esperance and Baroness Schroeder. If you propose growing peonies for the Chicago market, I would suggest that the best way for you to learn how to pack them would be to visit Chicago some time during the peony season, and go to a concern dealing in flowers, and they will show you just how to do it, and also give you the names of the kinds that their market most demands. L'Esperance is perhaps the most popular market variety.

There is a book on the subject of peonies by C. S. Harrison, published by the Webb Publishing Company, St. Paul, I think at fifty cents a copy, that is a very excellent book for you to use. Peony flowers usually sell for from ten to twelve dollars a thousand in the larger markets at wholesale.

Plum Pockets

T. M., Minneapolis, Minnesota—The plums which you sent are affected with what we know as plum pocket. This is a fungus which enters the fruit when very small, and causes it to take on the distended hollow form with which you are acquainted. It is also very similar to the disease that causes "leaf curl" in peaches.

The best treatment for this disease is to spray the trees about three weeks before the flowers open with Bordeaux mixture made of five pounds of lime, five pounds of sulphate of copper and five gallons of water. This is double the strength that is ordinarily used when trees are in leaf, and it is important to spray all the twigs thoroughly with it, as the purpose of its application is to kill the germs of the disease, as these winter over at the base of the buds and in crevices in the bark of the trees. It is a very satisfactory remedy when properly applied. Nothing can be done to prevent injury this year.

Box-Elder Insects

J. E., Elroy, Iowa—The sample of boxelder twigs which you sent are injured by a borer that is now working in the new growth. In the effort of the tree to overcome the injury of this insect the peculiar swollen appearance of the twigs is produced. There is practically no remedy for this trouble, and the only practical treatment is to let it alone until the spread of its parasites destroys it. It is the common history of our insect pests that they spread very rapidly for a time until the parasites become numerous,

Live Stock and Dairy

Useful Facts for the Stock Raiser and Dairyman

Indigestion Due to Food Changes

INDIGESTION—want of due digestive power—has been described as a hydral headed malady, and it is certainly the root of many grievous ailments in all animals, including the superior animal, man, but it is also manifested in very varied forms, and is due to many different causes. Some of them are ill ascertained, and include morbid appetite, certain nervous conditions, chronic organic changes, and the presence of foreign bodies in the stomach; but perhaps the most fertile cause of digestive disturbance, differently manifested in different animals, is sudden changes of food—that is, incautiously introducing an article of diet which is new to the animal.

Among cattle, turning-out and taking-in time are most prolific of cases of digestive disturbance, while, unless due to bad management or to obscure chronic disorders of the digestive apparatus, they rarely give trouble on account of the occurrence of digestive disorders when once settled, whether in the fields on grass or in the sheds on the regular winter rations.

Sheep also suffer, sometimes severely, and particularly in the matter of tympany—"hoven" or "blown"—from sudden changes of diet, as from a poor, dry pasture to a luxuriant one, or to "seeds," clover or roots.

Horses, unless badly fed and managed, never suffer so much from colic as when changed in the summer onto green stuff or from green feed to dry corn and hay and straw chaff.

The indications, therefore, are to make all changes gradually or cautiously, and in the case of a young animal to educate the stomach to dealing with fresh material or to food to which it has been unaccustomed.

Scours in Calves

The calf often suffers from gastro-enteritis, in which the average owner sees nothing but "white scours" or "skit," from the sudden change from new milk to skimmed milk or separated milk and substitute gruel. In the case of young bovines, whose untrained digestive organs are, of course, much more delicate than those of the adult, it is especially necessary that changes be gradual. The following directions may be quoted as an example of the precautions that should be taken when changing the food of calves:

In starting young calves, commence as follows: Feed a fortnight on mother's milk. In the case of undersized calves allow a little longer time on new milk. Add a little of a good cream equivalent to skim or separated milk. Increase the quantity of the mixture gradually at each feed, so that the calf when three weeks or so old may be feeding altogether on skim or separated milk and gruel.

In case of sudden change the new food proves a source of irritation, inflammation sets in, extends to the intestines, and gives rise to an acrid irritating discharge, that has caused the disorder to be termed "white scours."

The change from milk or gruel to dry, solid and bulky food should also be gradual. In the calf the abomasum, fourth or true digestive stomach, is the largest of the four pouches into which the gastric mass of the ruminant is divided, and it is only after weaning and as the animal receives bulky food that the first stomach, rumen or paunch, comes to so greatly exceed the remainder in containing capacity. A form of indigestion, due to accumulation of material in the abomasum, is seen in partly weaned calves, when the first and third compartments have not been able to properly prepare hay or other solid food material for digestion in the true stomach. Thus, it is most important that there should be a gradual introduction and increase in solid food, in order to educate the stomachs.

The first result of these forms of indigestion in calves is obstinate constipation, which is often quite unnoticed, and then diarrhea occurs on account of the irritation of retained undigested matter. In the cases characterized by diarrhea there is generally an early resort to astringent medicine, the idea being to at once stop the "scours."

This is a great mistake, and it is preferable to first administer a full dose of castor oil, whether constipation or diarrhea is present, in order to purge the bowels of the irritating material that is the cause of the "scours." This very often at once stops the purging, on the principle

of "remove the cause and the effect will cease." If the oil, which may be advantageously combined with a little laudanum or chlorodyne, does not stop the "scours," then it is time to give antacids, carminatives and cordials, to promote the digestive processes.

"Hoven" or "Blown"

In older bovines, indeed in ovines as well, the most common result of sudden food changes is acute tympany, or "hoven." This is known in some districts as "dew blown," an expressive name suggestive of the most fertile cause—wet green food of various kinds.

"Hoven" generally occurs from the voracity with which cattle that have been kept on dry food all the winter consume green stuff. Hence it is most prevalent in the spring. The principal symptom is a marked swelling on the left side, caused by the distension of the rumen with gas, and this swelling, which bulges up in the space between the ribs, the spine and the pelvis, has a resonant or drum-like sound when tapped with the fingers.

Steel says: "Elimination of gas in the rumen always occurs to a certain extent. The causes of excess in this matter are either dependent primarily on the state of the stomach or the nature of the ingesta. Fresh green food introduced in too large quantities undergoes fermentation, for it is placed under conditions favorable to that process—a temperature of about one hundred degrees and moisture. Thus, in the earliest stages, carbonic anhydride is the gas given off; but if these matters remain long in the stomach they decompose, and the sulphureted hydrogen is eliminated. Considering the conditions of the full rumen, fermentation must occur in due course, so that only a small quantity remains."

All sudden changes of diet may cause this disorder, but turning out on wet grass or luscious "seeds," or the escape of the animals into young growing grain or wet clover, is the most fertile cause. Sheep especially get "blown" on wet clover.

In turning out to grass for the first time after wintering in, a bare place should, if possible, be selected, or if all the keep is young and luscious, care should be taken that the dew is off and the herbage as dry as possible. Wet grass and clover are more dangerous than an abundance of grass. The voracity with which young green stuff is transferred to the rumen has much to do with its fermentation and elimination of gas, and it is therefore best to turn out after the animals have been well fed, when naturally they will be less greedy. Changes of pasture should be made late in the day.

Clover sometimes causes serious loss, and we have seen a field strewn with dead and dying victims of acute tympany, where the beasts have remained for some time undiscovered, or the owner or attendant has lacked sense to promptly puncture the rumen and let out the accumulated gas.

Colic in Horses

Colic in horses is of two kinds—spasmodic and flatulent. The most fertile cause of flatulent colic, which occurs principally in farm horses, is the sudden change from grain and hay to an abundance of green food. Rye, "seeds," alfalfa, trifolium, tares, etc., are often fed in huge pitches to farm horses, which greatly appreciate it, and suffer in consequence from windy colic, unless it has been gradually introduced. Horses when accustomed to such food can consume quantities that without preparation would make them seriously ill.

An excellent plan of introducing green food in the farm-horse stable, and at the same time economizing the forage, which is not generally too plentiful at the outset, is to chaff some of the green stuff with the hay. For this purpose a small breadth of rye, sown to come in early and precede the other green forage crops coming along in succession, is a great boon, but any green stuff can be introduced in the same way. The precaution must be taken, however, not to cut more than will last for the day, for cut green stuff and hay if left in a heap will, under partial fermentation, cause digestive derangement and flatulent colic. Trouble sometimes occurs when large quantities of green stuff are cut wet and brought to lie in a heap in the food chamber or at the stable door, but the rule is that horses once settled on green food, and receiving it in moderation, digest it easily and completely.

W. R. GILBERT.

What Feed Do You Buy?

DO you buy feed? If so, what are you getting when you buy? These are important questions which should concern every farmer or feeder who is buying feed. Can you answer them satisfactorily to yourself? I will tell you why I ask these questions. Farmers are being swindled right and left by unscrupulous dealers in these commodities. About one fifth of the feeding stuffs examined fall below their guarantee composition to a noticeable extent. Beside this, many show the use of inferior materials, like ground corn cobs and oat hulls, to make bulk and weight.

I think in some cases it is doubtful whether the energy in the digestible portion of the feed is sufficient to enable an animal eating it to consume the entire mass, to say nothing of fattening or nourishing the animal or making milk. This is the kind of stuff that many farmers are buying and paying good prices for. Are you doing this? This is a very important question for you to answer. If you are, how long are you going to continue to make donations to feeding-stuff manufacturers in exchange for ground corn cobs, oat hulls and other refuse?

It seems strange, doesn't it, that a man should cast aside corn cobs, oat hulls and other refuse which he has on his farm, drive to town, buy some of the same kind of stuff that he has discarded, pay a good price for it, take it home, and expect his stock to fatten on it? Yet this is what actually occurs. And the cause of it is generally the unwillingness of a man to keep in touch with the manufacturing world, through the experiment stations, for most of them publish reports on feedstuffs from time to time, showing just how much faith can be placed in the guarantee of a manufacturer selling them in their particular state. It does not take an expert every time to tell whether stuff is good or not. I have seen feed many times that any observing eye could tell was not what it ought to be. But if you are buying feed and do not know what you are getting, write to your experiment station, for its analysis, and learn a surprising lesson, which may be worth money to you. R. B. RUSHING.

Wet, Dry or Cooked Feed —Which?

ON OUR farm we used to feed the ground grains, such as oats, barley or corn, and concentrated feedstuffs, bran and other like by-products, by wetting them with water. We now have discontinued the practise and feed them in the dry form.

There are reasons for this change, and I will give them to convince those that yet think wet feeding preferable.

In the first place, how is it possible to keep mangers clean and sweet when the slop of ground feed is fed in them, as some do? It might be done, I suppose, but no one will do so much extra work. Some feed in pails; but this is so much work and takes so long a time, comparatively, that I prefer to be excused from indulging in it.

Some feed wet food because they think less is wasted, as dry ground feed is blown away more easily. I don't believe there is any difference, for I know when we practised wet feeding I used to be annoyed by the cows raising their heads and spattering the feed under their feet.

A reason advanced by the advocates of wet feeding is that the animals eat it sooner. This, however, really is an argument in favor of dry feeding. Feed given wet is swallowed hastily, without having been properly masticated. Eaten in this way the greatest value cannot be gotten out of ground feed.

Now and then we find a farmer who goes further yet and cooks the feed. Then it generally is not ground. Certainly I should not consider it necessary to do this.

For human beings grains are generally cooked or in some other way subjected to heat before being eaten. It is thought that this makes them more palatable and also more digestible. For this reason the advocates of cooking feed for stock argue that what is good for man may also be good for beast. However, just now there are "food cranks" who believe it preferable for many reasons to eat grains raw. Anyway, I think that whatever may be best for man, for farm animals it does not pay to cook grains.

A farmer who cooked rye for his cows gave as a reason that the grain would

increase about one third in bulk after being cooked. This increase is due to the water added and to the swelling of the kernels. This in itself is of no value if the feed is not made more digestible.

It may be well to cook grains or grind and wet them when the animals are so old that they cannot properly chew ground feed dry, but really it does not pay to keep cows that long.

I don't know that any experiments have been conducted with cows to ascertain the relative merits of wet and dry feeding or cooking whole grains. However, such experiments have been made with hogs by state experiment stations. The conclusions arrived at were that it not only did not pay, but sometimes less gain was made with a given quantity of grain when fed cooked instead of dry or ground. I think that this would be more the case with cows, as they are ruminants (cud chewers), and thus able to digest more thoroughly.

F. A. STROHSCHEN.

Summer Management of Sheep

I WEAN my lambs during late July and early August. Some advocate allowing them to continue to run with the ewes, but the latter will do much better without the lambs, and with plenty of pasture the lambs will make better growth if they are separated from the ewes.

Food requirements of the ewes and lambs are very different at this time, which makes a separate box more necessary. I do not fatten the ewes, but put them into plump condition preparatory to entering the breeding period and the winter. The lambs, on the other hand, are pushed rapidly, as quick maturity is a factor of importance if a good profit is to be made. The lambs make a better growth while young at less cost a pound, and taking all things into consideration, it is more desirable to get them off to market at the earliest possible moment.

I allow my ewes the run of a good mixed pasture, with access to a little clover, and they do exceedingly well. I feed them no grain at this time. The flock is provided with a plentiful supply of good, pure water, which is very essential, as a discouraging outcome is apt to be the result if they are allowed to drink impure water. I feed the lambs a small quantity of oats mixed with a taste of bran as an appetizer, and allow them the run of a fresh clover pasture, which keeps them growing nicely.

Frequent change of pastures is a great help with sheep, particularly with the lambs, which are rather particular about what they eat. If they are turned into a new range after a shower it will be surprising to see how thoroughly they will go over the grass again, even though it has been cropped closely before.

I watch my lambs and ewes closely for any indications of stomach worms or other insect pests. I keep the stable darkened and accessible, so that they may get away from the flies in muggy weather.

There is no other class of live stock on the farm that will return as great a profit on the investment as will sheep, and I can hardly understand why more are not raised. Of course, sheep must be properly handled, and no one will have good success in raising these animals unless he gives them good care and attention at all times.

W. M. H. UNDERWOOD.

Dairy Notes

If good butter is to be had in hot weather the milk and cream must be kept cool. If the milk box is so arranged that cold water may be kept flowing through it, this is not difficult.

Voluntary exercise contributes to the good health of the dairy cow, while involuntary subtracts from her profits. The cow is a creature of the quiet life, and neither her health nor her produce is improved by her being required to do unnecessary labor.

GILBERT ALLEN.

Notes on the Horse

The man who makes horses pay a good profit knows a good animal when he sees it. He knows the value of care, keeping them in good coat and their feet in perfect shape. He understands that horses develop best in kindly hands.

The collars and saddle pads used on work horses should be thoroughly cleaned every day, to remove the filth. If they are left all gummed up they will soon gall and make mean sores. Dust and sweat will ruin the shoulder of a horse in two or three days.

W. H. U.

Growing, Handling and Feeding Ensilage

THE variety of corn that will grow and mature the highest proportion of grain to fodder during a normal growing season is the best corn that can be grown for ensilage. We should select our ensilage seed corn from some variety that is thoroughly acclimated. It is also true that corn that has been grown in one locality for a number of years, and the quality been maintained by judicious selection, will yield more grain than a variety which has been introduced from some distant section of the country.

A few years ago the chief aim of the growers of ensilage was to grow the largest possible amount of forage on an acre, but practical feeders are fast learning that it is not a matter of quantity, but of quality, and they have discontinued the use of the large stalks and are devoting more attention to growing corn that will produce better ensilage. A medium-sized stalk and a good ear will make ideal silage if allowed to become fairly well matured before putting in the silo.

Growing the Corn

In the management of the corn crop that is being grown for ensilage there are some essential points that must be followed if we succeed in producing a valuable product. First among these points I would name early maturity of the crop. Much of the ensilage put up does not reach a sufficient maturity to insure its feeding value when siloed. By allowing the corn to mature before cutting the tendency to produce sour ensilage will be overcome.

The best quality of ensilage corn is produced by planting the corn field in check rows, so that the crop may be cultivated both ways, and also so that it may have plenty of light and sunshine while it is growing. Contrary to the opinions of many farmers, it has been proven that more tons of ensilage can be grown on an acre when the corn is planted in check rows than when the seed is sown with a drill, and the increased feeding value of the ensilage will more than make up for the extra labor required to care for the growing crop. In fact, when a field is check rowed, all of the labor may be performed with a horse and cultivator. The increased cost of Western grain foods and mill feed makes it necessary that we increase the feeding value of our home-grown stock foods, and there is no better way to improve the feeding value of our ensilage corn than to select early maturing corn and check row the field and cultivate both ways.

The Silo

The value of ensilage as a food for dairy cattle has become generally recognized in all dairy sections, and it will be useless for me to touch upon its value as an economical dairy food. There are numerous complaints regarding the ensilage not keeping in good condition, but the one cause which has contributed more than all of the others is the faulty construction of the silo. No matter how good the corn that is ensilaged or how carefully and intelligently the ensilage is fed, if the silo is so constructed that a moldy, sour product results, it will be impossible to get satisfactory results from feeding.

The round stave silo is the best and cheapest silo that can be constructed when we consider its ability to preserve the ensilage in good condition, its cheapness and simplicity of construction and its durability. The concrete and stone silos are excellent, but they cost too much for the common farmer, and unless built as a permanent silo they should not be considered. The round silo presents no corners to pull apart and admit air or to prevent the ensilage from settling evenly; no expert labor is required to construct it.

Location of the Silo

The silo should be located where it will be the most convenient for feeding. This condition is important above all others. When stock is kept in a basement, the bottom of the silo should be on the level of the basement floor or lower. Caution should be observed in locating a silo so as not to get it too close to the milking room, as the milk is liable to become

tainted if there is a strong odor of ensilage in the room at milking time.

The size of the silo to construct depends upon numerous things, such as the amount of hay and other forage fed to the animals, the quality of the ensilage and the amount of pasture that the farm has to provide summer forage for the cows. For a large dairy I would advise two silos—a large one for winter feeding and a smaller one for use during warm weather. The smaller feeding surface prevents the exposed surface from spoiling when less ensilage is being removed for feeding.

Filling the Silo

Before filling time comes, the silo should be examined and the hoops tightened, the doors numbered so that each will fit properly in its place, and everything prepared so that there will be no delay after the work of filling has begun.

The corn is cut with corn binders, and when possible it is best to have these machines running at the same time the silos are being filled. It might be advisable to cut one day before filling, but the weather is rather uncertain during the fall, and the corn will be injured if allowed to lay on the ground during a week's rain. When the corn is convenient to the silos we usually employ about four teams to haul to the cutter and five men in the field to load the bundles, two binders and six horses to cut the corn, and one man at the ensilage cutter to assist the feeder and to save the strings that bind the bundles. This is done more as a matter of precaution than to save the strings, for there have been numerous instances where cows have been injured by eating the strings after they have been in the silo. Two or three men are kept inside of the silo to keep the outside edges packed and to distribute the ensilage over the surface properly.

With a good working crowd of fourteen men, besides the men with the machine, from one hundred to one hundred and

the same results. We feed each cow that is giving milk about thirty pounds of ensilage a day, in two feeds—one in the morning after milking and the other after milking at night. Ensilage should not be fed before milking, owing to its odor, which has a tendency to taint the milk when it is fed before milking.

A ton of ensilage is the cheapest feed that can be grown. One acre of corn will yield from twelve to twenty tons of ensilage, equal in feeding value to six or eight tons of hay, besides occupying about one fourth as much space when it is stored, and costing less to harvest.

A cow can be made to produce from sixty to eighty per cent as much milk when fed ensilage and clover or alfalfa hay as when allowed the run of an average pasture, dispensing with a large amount of expensive concentrated feed-stuffs. However, I am of the opinion that a small amount of grain food should be fed in connection with ensilage and clover or alfalfa. There are very few cows injured by overfeeding if ensilage forms the chief portion of their ration.

That the silo has come to stay is amply demonstrated by the fact that in all of the older dairying sections new ones are being built and few old ones are abandoned after being used under favorable conditions.

The silo has been the means of solving the problem of intense culture on many farms, and while our experience in feeding ensilage has been confined largely to feeding dairy cattle, yet we believe that it is practical in all lines of stock feeding, especially if young beef is the object of the feeder, or if feeding of sheep and the making of early lambs is the chief aim of the business. W. MILTON KELLY.

Selecting the Boar

THE selection of the boar is a matter of very great importance, and I am thoroughly convinced that some farmers do not have as good success as they should and could have in raising hogs, simply because they do not exercise the care necessary in selecting the male to be used in their herds. The boar should be selected with even greater care than the sows, for his influence equals the combined influence of all the sows in the herd. A superior boar may be used on a herd of inferior sows with good results, but the use of an inferior boar on sows of high quality will have a disastrous outcome. The one method raises the standard of the herd; the other invariably lowers it.

A boar with the male characteristics strongly developed should be selected, preferably as a yearling or else as a pig that has been purchased at the same time as the sows and allowed to come to maturity before being used. He should have a well-crested neck and a strong masculine head. His shoulders ought to be developed according to age. However, strong shoulder development in pigs under a year or eighteen months old is objectionable.

The boar should be selected to correct any defects that may be common to the sows. For example, if the sows are rather coarse in bone and loosely built, the boar should have high quality—fine bones, skin and hair. If the sows tend toward over-refinement and delicacy, the boar should be rather rangy and strong boned.

The same indications of a good pork-producing carcass that the sows require should be seen in the boar—a broad, straight, deeply fleshed back, much depth and length of sides, and well-developed hind quarters.

The visible organs of the reproductive system should be well developed and clearly defined. It is never best to buy a boar with small, indefinitely placed testicles. Always avoid particularly a boar with only one testicle visible.

The boar should stand upon his toes, and there should not be the slightest indication of weakness in the pasterns of the young ones. In a matured boar (two or three years of age) that has seen hard service it may be expected that he will be a little down on his pasterns, but a six or eight months old pig that does not carry himself on upright pasterns is not a safe animal to select for a herd boar.

W. HANSON.

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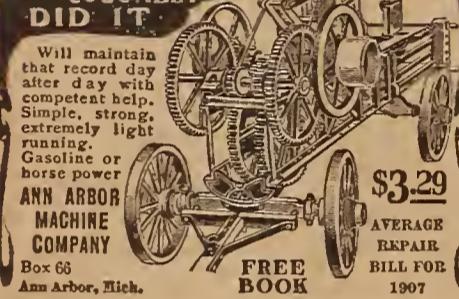
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Poultry Raising

A Handy Poultry House

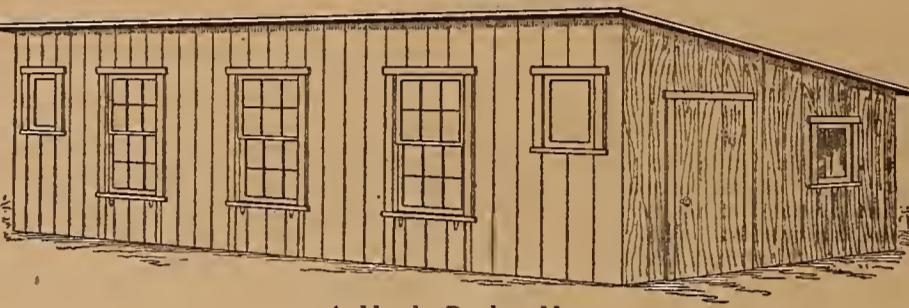
THE two illustrations of a handy poultry house and floor plan will explain the constructional details of a convenient combination scratch shed and roosting house for laying hens.

The house is fifteen or sixteen feet wide and thirty-two feet long, six feet high at the rear and eight or ten in front. The interior is divided as shown—three eight-foot roost rooms, two four-foot nest rooms and a small feed room. A large feed room is not desirable in a poultry house for small flocks, as the feed will absorb more or less of the foul odors if allowed to lay any length of time.

The nest rooms may seem unnecessary to many, but the hens will, as Nature has taught them, find a dark and secluded

and cap then be shoveled into a wagon. The two partitions, separating the three roost rooms, should be boarded up solid, and not built of poultry netting. The heat from the hens causes air currents to play up and down the length of the house if the netting is used, which is very liable to cause colds, roup, etc.

Small hen holes are cut just above the dropping board, for the birds to enter the nest rooms, as shown at B B. Many of us would like to have a house with scratch sheds, but do not feel able to pay the extra expense. A house built as shown in this plan provides the scratch room at practically the cost of the usual house that has no scratch sheds. The room under the dropping boards, with



A Handy Poultry House

place to lay, if it is possible to find one, and if you do not provide the same, they will find one that possibly you cannot find, and the eggs will be lost. I find that the nest rooms, as shown in the illustration, will soon pay for themselves, and you always know just where to look for the eggs.

The nests for this house are built by nailing lath around three sides of a one-inch piece twelve inches long and five or six inches wide, allowing small half-inch spaces between the lath. The four-foot sections may have either three or four nests, which are placed on the ground, or on small brackets, and are to be removed when cleaning them.

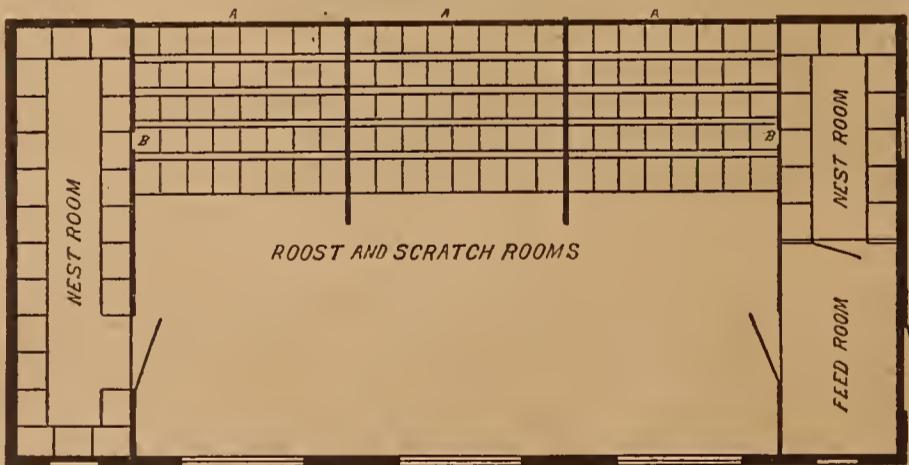
One of the principal features of this house is the dropping boards and the manner of cleaning them. Doors twelve inches wide and the full length of each board are swung on hinges, as shown at A A A. These doors open out and up, and the boards are cleaned with a garden hoe by raking the droppings into a trough made for the purpose, or they may be allowed to drop on the ground,

that in front of them, provides a large scratching floor space.

The ventilation of this house is a feature not to be overlooked. The small wooden doors below the windows are swung from the top and open out. This allows the air to enter the house in any quantity desired and will keep out all wind and rain. The top sash also swings out from the top, in the same manner, and may be opened in warm weather. Never build a ventilator in the roof of your poultry house unless you wish to have rousy birds.

While all poultrymen have their own ideas of building the walls of a poultry house, the writer will say that he builds them with two thicknesses of eight-inch ship lap, with heavy tar paper between, and covers the roof with some good paper roofing, and paints the exterior of the house with two coats of good paint. The foundation is of concrete, six inches thick, and in the ground about fourteen inches. The floor is filled in six inches with any dirt that is handy—gravel and sand preferred.

J. E. B.



Floor Plan

Pen Notes

THESE are the nights when the chicks need all the fresh air they can get. Open the windows, but don't forget the screens.

Hens do not like to feel that they are prisoners, any more than the rest of folks. So if you cannot let them run at large, give them good big yards. They will do so much better, because hens are liable to get to worrying, the same that you and I do sometimes, and worrying hens will soon get to be unprofitable hens. Can't afford that.

It is all right to be good to your hens, but don't be too good. There is such a thing as getting your hens too fleshy. Then they are apt to be lazy and like to sit around. You know how that is yourself. Are yours that way? Stop feeding such heavy food. Make your hens dig for every morsel they have. It will take a little while to reduce their flesh, but you ought to do it if you would have them bring you in any money.

E. L. V.

Ducks With Weak Legs

A LADY out in Wisconsin has trouble with her ducks. Their legs are weak, so that they cannot walk for a time, and it worries her to see them lying around. She feeds ground feed, buckwheat and some whole corn, with grit and plenty of grass to pick at. The ducklings were all right at first, but now they have this difficulty.

Our friend does not speak of giving her ducks any bone. The feed she does give is probably pretty heavy for such little fellows. They are no doubt pretty fat. They have grown heavy under this treatment, so generous, because the lady wishes to get them along as fast as she can, of course, but the weight has been gained at the expense of strength for the bones. So they are weak.

Now if she will stop feeding such heavy feed for a while, and furnish her ducklings more green bone, it is likely that the weakness will pass away. Sometimes a tonic of quinine is recommended; but I

am not much of a hand to give medicine of any kind to folks, or animals, either. It is far better to control health by means of the diet than to resort to drugs.

Another thing. It is not a good plan to feed whole corn or any kind of hard grain to young ducks. They cannot handle it. For this reason it would be well to stop giving the corn and buckwheat. The ducks should be given as much chance to walk about as possible. That does them good. It is the best thing for anybody or any creature to have something to do every day.

E. L. VINCENT.

Early Molting

THERE are several different systems of getting the hens to molt early. One is to select such as you desire to get on their new plumage in good season, and confine them in small yards for about three weeks, giving only a scant ration all the time. Feed light enough so as to reduce their weight considerably, then at the end of this time give them a good rich food, and if possible a grass run. The result is that the old feathers have become dried out by this fasting, and the change to a rich and liberal ration starts the new feathers, and they come on very rapidly.

Hens that are allowed to sit two or three weeks will generally commence to shed as soon as they are broke up and fed a good fattening ration.

I have never practised to any extent the plans adopted to force early molting, but with yearling hens and those that are older, if laying steadily, some course must be taken to get them to molt early, if we expect fall and winter eggs, for the hen that is kept up in good laying condition, and produces eggs right along all summer and during the warm weather in the fall, will molt late and then be a poor winter layer.

V. M. COUCH.

Poultry Pickings

FLAT perches are more comfortable than the round ones. The latter also cause crooked breast bones in growing birds.

In their second year hens are more profitable than at any other time, and it is then they make the best breeding birds.

If a hen appears droopy, look for the large gray louse on the head and neck. Melted lard applied in small quantities is a good remedy.

Any farmer who has a large orchard and does not keep a flock of poultry is wasting valuable space which could be utilized to advantage.

One of the greatest drawbacks to the poultry business is the tendency to crowd fifty fowls into a space where there is only room for twenty.

Impure drinking water and a filthy water vessel always assist in causing and spreading disease. The drinking vessels should be clean, and filled with fresh water once a day at least.

An attractive package, with a label that is both attractive and neat, filled with one dozen fresh eggs uniform in size and color is easily worth, and usually brings, three to five cents a dozen more than ordinary store eggs.

W. H. UNDERWOOD.

Kernels Among the Chaff

ALL kinds of young fowls need bone-making material. Neglect this and you may be sure something will go wrong every time.

This is just the time when mites do a mighty stroke of business if you give them a chance. Do you do it? Fight them with all your might and the mites will soon disappear.

Give all kinds of fowls the best chance you can to exercise. If they get the idea into their heads that they are prisoners, you may be sure they will worry about it. Hens that worry never do very well, any more than a man does when shut up with nothing to do.

Not so very long ago I ran across a quiet little old lady who told me she had just sold a pair of fowls for seventy-five dollars. Made me most ashamed! But those fowls were top notchers. Nothing else could have commanded that price.

It takes a bit more work to keep the nest boxes all clean now, but it is one of the best things you can do. Hens are very particular as to what kind of nest they have to lay in. Often they go away and make nests of their own, just because the boxes we give them are so unclean they do not like them.

The only way to be sure that ducks will come back at night if you give them a chance to go on a running stream is to fence off a bit of the water. One year we kept one boy busy hunting up the ducks and bringing them back when night came. It is a kind of work that boys do not like, and I don't blame them, either.

E. L. V.

Farm Notes

Device for Grading Levels

A GREAT improvement would be made on most farms by a thorough system of ditching—tile or by other means. The benefit of ditching has been made so obvious by its application that there seems little need to put forward any argument as to its advantages. The farmer who fails to avail himself of this means to increase his crops and appreciate the value of his land is not doing what he can and should in his individual case to make farming a better-paying proposition.

Actual practical experience has proved that the conservation of moisture for use by the crops during periods of drought as a result of proper tiling is of almost, if not quite, as much advantage as the carrying away of excess surface water following heavy rainfalls. After so many thousands of acres of once worthless land have been reclaimed and made productive beyond ordinary farm lands, and this fact patent to all, there would seem to be no occasion to advance a reason to an intelligent farmer why he should employ an effective drainage system on his farm, and that at the first opportunity, even if the tile needs be bought on time, and money borrowed to complete the work. Where conditions indicate the need of drainage, it will pay beyond a peradventure—pay for the expense almost in the increased yield of the first crops.

Most farmers are in a position to do the work of digging the ditches and laying the tile with the regular help on the farm, and at times, too, when other farm work is not crowding, so that the expense for this need not be of material consideration. The main handicap in this work with the average farmer, however, is in being able to secure the proper levels and falls for best results, so that it is considered necessary to call in an experienced ditcher to do this part of the work, and he usually receives a big wage for his services.

The home-made grading level illustrated in the accompanying drawing obviates the necessity for the trained "ditcher," with his stakes and cross lines and spirit levels for running grades, for with this ar-

center of the base board, then one screw in the top and through the end of one brace. Then place a steel square on the upper edge of the base board with the bit against the upright, carefully marking and fastening the lower end to the base board, again proving the square, as you should, too, when fastening the opposite brace, to avoid a spring. Square blocks may be used for the end "rests," but the V shape shown is more readily fastened with screws.

Next set a screw in the absolute center of the upright, on which to hang the plumb bob, and as accurately mark, cut or burn a place in the center of the sixteen-foot "straight edge," and see that the point of the plumb bob, when centered, meets the mark. After this a scale is marked—burning with the point of a hot nail is best—and it may be graduated to run grades of one inch to the rod up. To have the scale accurate, place the V-shaped point at one end on a perfectly level floor, and then, holding the other end firmly against the square or other measuring scale, raise the point of the V exactly one inch, let the plumb bob come to a perfect rest, and mark for the first line in the scale; raise again another inch, let the bob become stationary, and again mark, continuing to raise and mark an inch at a time until the maximum grade desired is reached, after which reverse and repeat the operation on the other end. In use these marks will show the fall or rise of grade to the rod by inches.

The foundations or other parts of a building may be leveled with this affair, and it may be used to take the pitch of rafter and similar work, and by setting high enough to sight over, to run levels over long distances. R. M. WINANS.

The Foundation of Success

IN ALL our farming and gardening operations we will find that the first essential and the firmest foundation of success is good seed. A number of failures I have to record this year are due solely to the poor quality of seed planted. In

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corn seed this year I would have had a fairly good stand, while the seed obtained from a local concern makes a very poor showing.

In lima beans, however, I had a good supply of old seed of my own growing (crop of 1906), but I bought and planted a quantity of limas from a local concern, with the result that less than half of it grew—not even too vigorously then—while my old seed, planted when I found I did not have enough of the purchased seed, gave a full stand and much thrifter plants. I would have done much better had I planted only the old limas of my own raising. Neither the eggplant seed of my own raising nor that purchased from a seedsman gave me a single plant. I might have saved and gathered seeds from some earlier specimens, some that I could have brought to full maturity, and would undoubtedly have had my usual good success in raising the plants; but I had to buy the plants, and even these were poor, and most of them died. Many failures are reported with field corn, from no other reason than that the seed was poor. A half stand often means a half crop. Farming and gardening do not pay so well that we can afford to raise half crops. Only full crops give us the returns that insure us fair profits.

Altogether it proves that we are usually not careful enough about getting our seed supply. Such seeds as corn, peas and beans, and among garden seeds especially, onion, cabbage, carrot, beet, etc., should always be tested for their vitality before we put them into the ground. We can trust the prominent seedsmen of known reliability, but we should be particularly careful to test seeds obtained from neighbors, local concerns or from our own old supply which we have saved over from the previous year.

Our success depends to a great extent on the care and discretion we exercise in this matter, and many of the seeds we need, especially field and sweet corn, beans, vines, etc., should be grown and gathered from the best plants on our own grounds.

We have been entirely too careless about this particular feature of the business. Often our intentions are good, but by neglect or procrastination we fail to put them into practise.

For myself I resolve to do better in the future in this respect, and so should you.

T. GREINER.

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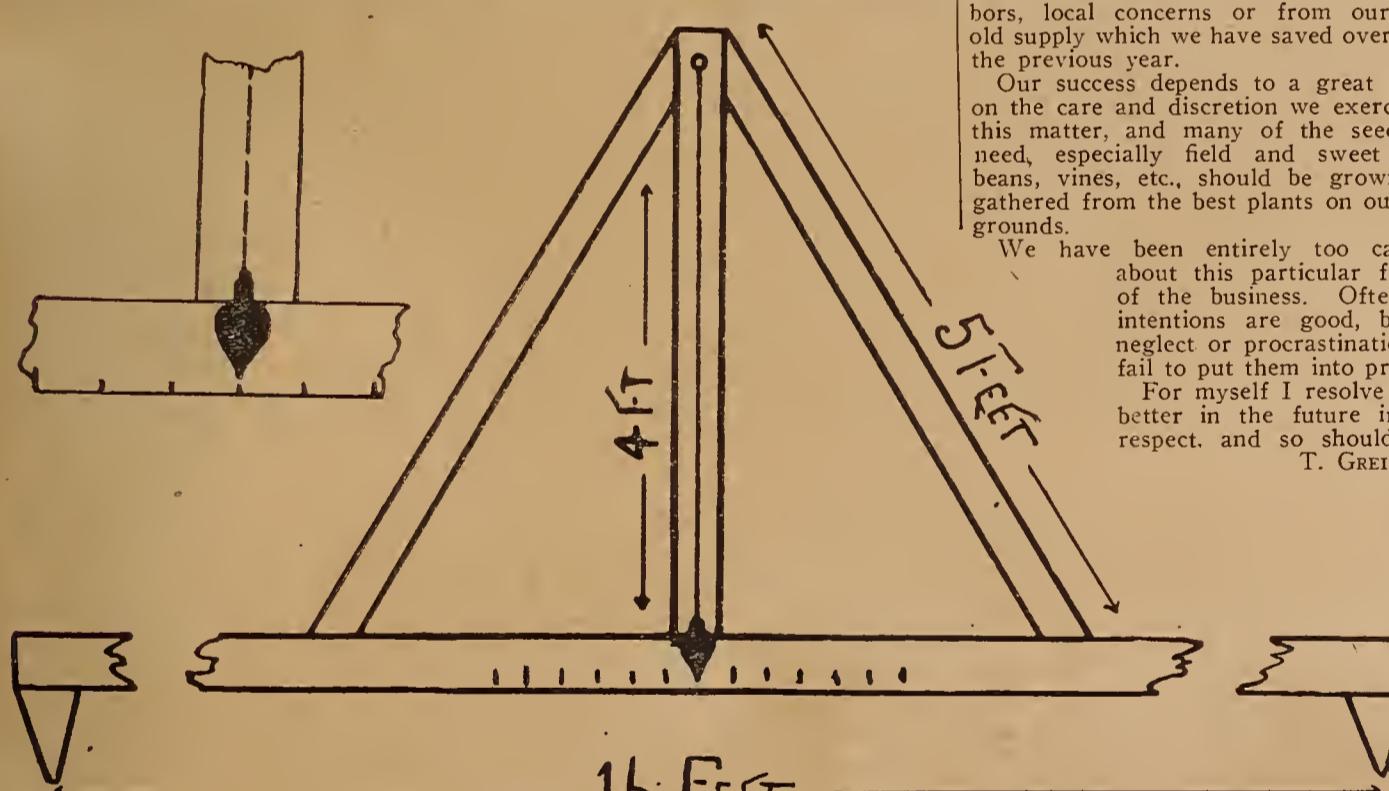
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Device for Grading Levels



16 FEET

most cases I obtain my supply directly from some of the prominent seedsmen in various sections of the United States. It happens in rare instances that the seeds they send out fail to grow; but this is the exception which proves the rule that our leading seedsmen habitually furnish good and fresh seeds.

My failures usually result from the use of seeds obtained here and there, from the department stores, from the commission seeds kept in groceries and hardware stores, and from the local seed concerns.

Sometimes certain seeds run poor everywhere. This is the case, for instance, with sweet corn and eggplants this year. Last year was a poor season for these crops, and much of the seeds grown did not get fully ripe, and show very low vitality this year. Yet if I had depended on my regular seed dealer for my sweet-

Agricultural News-Notes

Corn has now attained the highest price that has been reached in many years. In 1896 corn sold as low as twenty cents a bushel. The outlook for a good wheat crop is excellent, and as the visible supply has been greatly exhausted, the prospects for high prices for both wheat and corn before the close of the present year are excellent.

The Brazilian government is to be congratulated on having secured the services of Prof. C. D. Smith, who for many years has been director of the state experiment station at the Michigan Agricultural College. Professor Smith is well qualified to organize a great agricultural college and experiment station in Brazil. This appointment means much for the rapid progress of agriculture in that country.*

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arrangement we can take our own levels and run our own grades very easily and accurately. It is as accurate as a spirit level and much easier to operate, while there is no complicated mechanism to adjust or get out of order. The cost of material is nominal and any boy handy with tools can make one in half an hour.

The "straight edge," or base piece (shown in sections to economize space), is one by four inches by sixteen feet in length. Care should be exercised to select a perfectly straight-grained, well-seasoned board with true edges that will not warp. The center upright is one by three inches, four feet long, and the side braces are one by two inches, five feet long, and these, too, should be of clear, dry lumber. Use screws in fastening these several pieces in place, as they are not as likely to split the wood as are nails, nor to work loose, and so allow the frame to get out of "true," in which condition it would be worthless.

To "square" the upright, place a screw in the center of the lower end at the exact

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Taxation Reform

THE legislature of Ohio last March adopted the following joint resolution, the italics showing the changes proposed:

Be it resolved by the General Assembly of the State of Ohio:

That a proposition shall be submitted to the electors of the state of Ohio, on the first Tuesday after the first Monday in November, 1908, to amend section two of article twelve of the constitution of the state of Ohio, so that it shall read as follows:

ARTICLE XII.

FINANCE AND TAXATION

Sec. 2. *The General Assembly shall have power to establish and maintain an equitable system for raising state and local revenue. It may classify the subjects of taxation so far as their differences justify the same in order to secure a just return from each. All taxes and other charges shall be imposed for public purposes only and shall be just to each subject. The power of taxation shall never be surrendered, suspended or contracted away. Bonds of the state of Ohio, bonds of any city, village, hamlet, county or township in this state and bonds issued in behalf of the public schools of Ohio and the means of instruction in connection therewith, burying grounds, public school houses, houses used exclusively for public worship, institutions of purely public charity, public property used exclusively for any public purpose, and personal property to an amount not exceeding in value \$200, for each individual, may, by general laws, be exempted from taxation; but all such laws shall be subject to alteration or appeal; and the value of all property, so exempted, shall, from time to time, be ascertained and published as may be directed by law. All taxes and exemptions in force when this amendment is adopted shall remain in force, in the same manner and to the same extent, unless and until otherwise directed by statute.*

The Amendment Explained

In explanation of this proposed amendment to the constitution of Ohio, Commissioner Allen R. Foote says:

"This amendment does not make it necessary to change any law on the statute books. It does not grant any authority for the exemption of any property now taxable. It provides the only way in which the demand for the taxation of public bonds now exempt may be satisfied. It provides the only way in which greater equality in the burdens of taxation can be secured; the only way by means of which methods can be devised to obtain a just return from the owners of franchises, stocks, bonds and other intangible property.

"Its real purpose is to give power to the General Assembly to revise the laws of the state as changes in conditions, experience and reason may from time to time show to be necessary for the promotion of the general welfare.

"Those who sincerely desire to accomplish these purposes cannot properly perform their duties of good citizenship without voting for the adoption of this amendment at the polls at the November election.

"This amendment was drafted and proposed by the Tax Commission appointed by Governor Harris to investigate the subject of state and local taxation in Ohio. The report of this commission is the ablest report ever submitted to the people of any state by a commission appointed to investigate this subject. It should be read and studied by every voter in the state.

TO INSURE CONSERVATIVE AND SCIENTIFIC TAX LEGISLATION
FOR THE BENEFIT OF EVERY INTEREST IN THE STATE

"When the Taxation Constitutional Amendment has been adopted by the people we shall advocate such changes in the tax laws as may be recommended by a permanent Tax Commission after careful study and investigation. Until such study, investigation and rec-

ommendations are made, we are opposed to making any changes in existing tax laws."

The amendment is now before the voters. There is no question about the urgent need of reforming Ohio's tax system. The weight of authority is in favor of the amendment. Following are opinions of prominent farmers on the subject:

The People Competent to Make Just Laws

"I have no hesitation in saying that I believe the people of Ohio, through their legislative representatives, are entirely competent to enact such laws as will do justice to all citizens interested in the raising of money by taxation."—James Wilson, Secretary of Agriculture.

Uniform Rate Impractical

"The uniform rate on property valuations is impractical, causing deception, and therefore leading to immorality, and not as productive as a tax system adjusted to meet existing conditions. State constitutions should leave the collection of taxes under broad laws to the state legislatures, aided by expert tax commissioners."—W. M. Hays, Assistant Secretary of Agriculture.

Taxation of Farm Products

"The question of the taxation of farm products is so closely associated with the problem of the justice or the feasibility of enforcing laws providing for taxation of personal property, that it is necessary to take up the consideration of both subjects together. The primitive idea of taxation, that every form of property should be taxed equally, appears to be gradually giving way to the sounder view that taxes should be so levied as to yield the greatest amount of revenue with the least possible injury to productive industry. It is now beginning to be realized that the methods of taxation so long in vogue have been largely matters of guesswork, and that it is time that our systems of state and local taxation should be reformed and placed on a scientific basis. Farm products should, in my judgment, be exempt from taxation."—N. J. Bachelder, Master National Grange.

New Methods in Washington

"The attempt to tax all kinds of property by the same rules has in all times and in all countries imposed heavier burdens upon rural districts than cities, and in a large degree has measured the tax to be paid by each citizen by the amount of his consumption, rather than by the opportunity he enjoys to acquire wealth under the protection of the state. When as chief executive of the State Grange in Washington I first called the attention of the Patrons to the desirability of adopting a new method by our state, I had to point out that the provision in our state constitution which requires the uniform assessment and taxation of all property in the state at an equal rate barred the way, and that progress in taxation was impossible so long as the constitution forbade all changes. It was necessary, therefore, to inaugurate a campaign of education having for its object the essential constitutional amendments."—C. B. Kegley, Master Washington State Grange.

Change the Uniform Rate Rule

"Fifty-six years ago the framers of our constitution fixed therein the uniform rate on a property value, binding their own and future generations. The tether is too short to meet present conditions; let us cut it and under proper restraint have liberty to go far afield in an effort to reach the millions of intangible property now withheld because of the iron-clad uniform rate for all classes of property. It is my deliberate opinion that there should now be lodged in some department of the government, directly responsible to the people, authority to revise our system of taxation from time to time as changed conditions, necessity and experience suggest."—F. A. Derthick, Master Ohio State Grange.

ARE you planning to build a new barn or remodel the old one? If so, make ample provision for the entrance of sunlight and fresh air. Eliminate all the dark, damp corners, and you will have provided against many of the ills that are liable to come to your live stock.

One reason why you should practise a well-planned rotation of crops is that it results in economy of labor. If properly arranged, the work on one crop will partially prepare the soil for the next crop, and, too, the work is more evenly distributed throughout the year by having a variety of crops.

By applying to the United States Department of Agriculture, Washington, D. C., you can have your name placed on the list of those receiving the monthly announcement of the government publications that are ready for distribution. From this list you can select and write for any publication which you desire.

Many truck farmers and fruit growers succeed in producing good crops, but fail to get a satisfactory price for their products because they do not use the best methods in selling them. Several of the state experiment stations have been devoting some attention to a study of this problem and can give you some valuable information concerning grading, packing and marketing your various crops.

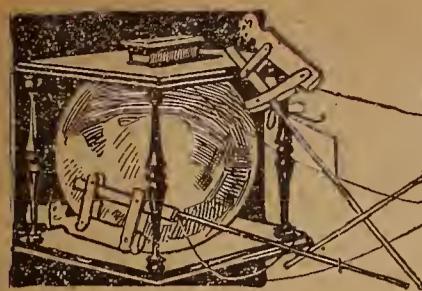
It is evident to the thinking man that farming of the future must become more and more intensive. It will not be profitable much longer to skim over the land and rob the soil of its fertility. The conditions already demand more scientific treatment of soils, of crops and of live stock. This means that there must be provided educational facilities of a nature that will link the farmer more closely to his occupation.

Are you getting anything ready to exhibit at your agricultural fair? The fair should be your school where you can place your products by the side of others and learn wherein you are succeeding with your various crops and classes of live stock. Your interest in better crops and better live stock will be increased by coming into competition with other exhibitors, and nothing else will so educate your judgment, and thus fit you for producing better products.

The process of learning to farm is long. One has many things to learn from experience. He who thinks he can leave his office in the city and go out and immediately become a successful farmer will in many cases find only disappointment. If you are contemplating such a thing it would be well to get in with some good farmer and work with him and learn from him, and read and study the methods of others before attempting to run a farm of your own.

So much attention has been given to spraying in recent years that some are losing sight of other important factors in orchard management which aid in keeping insect and fungous pests in subjection. It must be remembered that diseased leaves and fruit which fall to the ground should be carefully gathered and burned. All dead and broken limbs should be removed. Whenever twig blight or other diseases of the branches appear, the affected parts should be cut and burned and the wounds painted with white lead and linseed oil.

The immense aggregate losses that are charged up to the farmer annually are traceable to the general desire for big things. The tendency to undertake more than he is able to accomplish causes the farmer to overlook the fact that he is not preparing his soil so as to produce the best results in seed germination. He has so much to do that he often hasn't time to pay attention to seed selection or as to whether he is sowing varieties that are adapted to his soil and climate. All this combined with indifferent cultivation and careless methods of harvesting reduce the farmer's returns to a point often below the cost of production. These wasteful methods may well be changed to less extensive and yet more intensive ones.



Politics

By Alfred Henry Lewis



If you will recall how in the beginning I told the readers of *FARM AND FIRESIDE* that when I sharpened the pencil of politics it was not so much to induce men to agree with me as think for themselves. I wish to repeat that assurance.

* * *

To you who are to do the voting in November I would say this word: Both conventions were excessively cut and dried; the peasantry of the two parties, you and I and the rest of us, had but little to do with either. Which makes all the more reason for having a deal to do with the election. You may not be able to control the selection of the candidate; you are always powerful enough, however, to determine—in the teeth of politicians—the election of a President.

In accomplishing the latter, my counsel is to become in your vote casting as ruleless as a grizzly bear. Do your own thinking; and think only of the country, and not at all of party. Parties are a method, not a purpose; the country is—or should be—the purpose. But whatever you do, and whatever the reason of doing it, do it grizzly-bear fashion. There is this in favor of a grizzly bear: He forces you to fight bear fashion. Money, titles, ancestry, are of no avail, assuming you have one or all. A grizzly bear would daily with a Rockefeller with as brief a hesitation as though that financier were the inmate of an almshouse. Your grizzly knows no difference between Lazarus and Dives, and claws and hugs and crunches with a most noble impartiality.

The mighty trouble has been in every age that the world is timid. Also the world is too imitative, too lacking in originality and initiative. I once saw a flock of sheep, five thousand of them, drift up against a little thread of a stream not six inches wide. They balked and clotted and bunched into a woolly mass; not one would jump. I left them sidling along that six-inch stream as utterly unable to cross as though they had encountered the Missouri during a June rise. And as I left them, stalled at nothing, I could not avoid the reflection, "How like the way of the world!"

* * *

In going at the situation bear fashion there is none the less a point or two to bear in mind. Politics is natural, not artificial; it had its seeds in First Causes. It began with Man and will last while Man lasts. It is an expression of that conflict, irrepressible, unendable, between the Man and the Thing. On the First Day the morning sun shone slantwise across a field of original politics; the last rays of the Last Day's sun will fall upon politics.

* * *

Speaking of party managers, the campaign thus far presents a feature passing strange. The best hope of either side appears to lie in the weakness of its opponent. Ask a Republican why he believes that Mr. Taft will win, and he goes a-harping on the "weakness of Mr. Bryan. Mr. Bryan is inconsistent. He was for silver; he is for gold. He is for the expedient rather than the right. He has been beaten twice. New York and the East don't want him." So from point to point the Taft man will trippingly go, and from first to last you hear never a word of Mr. Taft. It is all "Mr. Bryan" and the "weakness" of that candidate.

To hunt up a Bryan adherent and crave his views is but to reverse the shield. He has little to offer touching the strength of Mr. Bryan; gives you no affirmative reasons for the presidential elevation of the gentleman. The earnest burden of his song is the "weakness of Mr. Taft. Mr. Taft is but an alias for Mr. Roosevelt. The banks and the railroads and the great money influences fear and hate the Roosevelt name." And so on, and so on, to the close.

Another curious matter is that while both parties pretend to denounce Money, each lays delighted stress on the assumption that Money is working for the destruction of the opposition and its candidate. This smells of inconsistency—to denounce Money, and then be secretly exalted to find it your ally.

Not that I myself would be understood as seeking to print ill of Money. The late panic has left me personally in a more or less humble mood. It has been too much a fashion to speak evil things of Money. Even I, myself, have taken occasion to remark that Money was so much like water that it commonly collects in lowest places. Now, in strict truth, there is room for thinking that Money has done more good than evil in this world, and some of us ought to apologize. There be dollars as stainless as stars; like lakes, high up among the hills, whose purity is even with their altitudes.

* * *

As one glances along the platforms, one observes how craftily and hard the managers of party have worked in efforts at constructing an issue. There is this to be said of an issue: Politicians can't control its production. The issue is ever that question which the public asks—the question put by the people to the parties. You will find the issue in the public's mouth. Be ready then, ye priests of Delphoo—ye, too, who are candidates of parties—with your answer! But do not think to both ask and answer it yourselves.

As I've already set forth, the issue in this campaign is Money in those forty and one expressions thereof which lie all about our feet. As shedding a ray let me refer to a letter which I the other day received from that Populist candidate for the White House, Mr. Watson of Georgia. It offers some hint of what subjects will be thrashed out between the parties on this autumn's rostrums.

EDITOR'S NOTE—If you don't agree with Mr. Lewis, "talk back" to him, confining your reply to two hundred words. We shall hope to publish some of these replies from time to time.—THE EDITOR.

It seems that I printed an article on Mr. Morgan which lacked somewhat of that severity the better-informed Mr. Watson felt belonged with the subject. Therefore he wrote me. I sent a letter back, asking leave to print; which was granted. I was the more willing to do this, since I know Mr. Watson for an honest gentleman, one who fails not of reasons for whatever hopes his bosom holds. Not that I fully agree with Mr. Watson on all questions of politics. That is of less consequence, however. Here is Mr. Watson's letter, which explains itself:

"DEAR SIR:—

"I have read, with the greatest interest and pleasure, your article on J. Pierpont Morgan. You say: 'Besides, and do my best with a search, I know of no one whom Mr. Morgan, with all his "Morganization," has injured.' It so happens that I can help you there to some facts:

"Once upon a time the legislature of Georgia chartered a railroad, which is known to the commercial world as the Central of Georgia. This was in the early days of railroading, when states were liberal in granting privileges, immunities and exemptions to those plausible capitalists, whose chief purpose in asking for charters was 'to benefit the people by developing their resources.' In every possible way the state of Georgia conferred favors and powers upon the Central Railway. Among those holding stock in the Central of Georgia was many a legal representative—trustee, guardian, administrator, executor. In this way actual widows and actual orphans became, to a large extent, owners of the stock in this specially favored railroad. According to a statement which Gen. Robert Toombs made in the Constitutional Convention of the state of Georgia in 1877—and which Gen. A. R. Lawton, chief counsel of the Central Railroad, who was present, did not deny—the original capitalization of the Central Railway was seven and a half millions, of which General Toombs said one half was water.

"The Central Railroad jogged along from year to year and from generation to generation and was one of the most respectable, well managed of railroads. Under President Wadley it reached its zenith. He was an ambitious man, and he put on a line of ocean-going steamers which connected the Central with New York and Boston. It may have been this reaching out which gave the Central the prominence which caught the eye of the Wall Street vultures. At any rate, the West Point Terminal crowd—General Thomas, Sam Spencer and Pat Calhoun—the same Pat who is now under indictment in San Francisco—swooped down upon the stock of the road and in a little while had such a large line on it that they only needed that which was held by Mrs. Hetty Green to give them absolute mastery of the situation. The plausible Pat Calhoun was deputized to go to Mrs. Hetty Green and do the talking for the Wall Street gang—Pat being the smoothest of the Wall Street liars; the old lady held them up for a good stiff price, but they got her stock and they got control of the Central Railroad. Then they issued new securities to the extent of sixteen million dollars, and they put Gen. E. P. Alexander in charge of the property, apparently for the purpose of wrecking it. Anyhow, he did wreck it, and the Central was put through a legal sale by the federal courts, it having defaulted in these new securities.

"At this stage of the game entered J. Pierpont Morgan. The railroad was bought by the Morgan crowd, and it was 'Morganized' to suit the queen's taste. By the time this patriot had finished his process of reorganization of the road, the Central was loaded down with securities of various sorts to the extent of about fifty-two million dollars.

"Now, who was *hurt*? To say nothing of any one else, the minority of the original stockholders of the Central Railroad were simply destroyed. Their property was confiscated under forms of law. A wail of distress and despair went up from hundreds and from thousands of the minority stockholders of this property. Many a widow, who had been living in comfort, and who had not the slightest doubt of the value of her Central Railroad stock, waked up to find herself beggared. The patrimony of many an orphan disappeared. Thousands of honest, hard-working men were immediately brought to destitution by the loss of their holdings in this specially favored Georgia corporation. Those who had purchased a majority of the stock of course saved themselves in the allotment of the new securities, but the minority stockholders were wiped off the face of the earth.

"One curious feature of the 'Morganization' was that Mr. H. H. Comer, who was influential in the counsels of those who were issuing the new securities, said, 'It would be too great a shame if the minority stockholders were not recognized at all,' therefore, these Christian gentlemen amused themselves by creating what they called 'Third Income Bonds.' These were the last of all the securities that were to be reached by dividends. Not until the 'Preferred Stock,' the 'First Income Bonds,' and the 'Second Income Bonds' had all been given slices of the net earnings, was it ever to be possible for the 'Third Income Bonds' to get even a smell of the frying pan.

"Now, to whom were those 'Third Income Bonds' given? To the original stockholders who had been so unfortunate as to be caught in the minority. In other words, the majority stockholders, represented by Morgan, deliberately took away property which they had

obtained from the minority stockholders, and in exchange therefor gave them bits of paper which, in all human probability, could never be of any value. As a matter of fact, the 'Third Income Bonds' have never been given a single penny in the way of dividends. I do not suppose that the holders will ever get a taste of the net earnings.

"Of course, you will realize the immense damage that was done to the public by the watering of the stock in this phenomenal way, for the reason that the service is kept at the lowest possible point of efficiency, and the highest possible charges are made for the service rendered—this being necessary to the present holders, in order that they may get dividends on forty-odd million dollars of securities, which represent nothing but pen, ink and paper.

Yours truly,

"T. E. WATSON."

Yes, the railroads are decidedly one of the wide-mouthed expressions of Money wherewith the times are bound to deal. "Strike, lest you be stricken!" exclaimed Queen Elizabeth, as she signed warrant for block and ax in the plotting case of Mary Queen of Scots. And so say I unto you, in reference to the railroads of this land of the free. Deal, lest you be dealt with! I recall how twelve years ago, in the campaign of 1896, divers Virginia farmers threw in a carload of sweet potatoes, and billed it to Mr. Hearst in New York, with a request to sell and turn in the proceeds to the Bryan campaign fund. The carload of potatoes brought \$73. The railroad charge was \$52. The campaign fund was bettered by \$21. When, standing between producer and consumer, the railroad claims more than two thirds, it should be notice to both producer and consumer to bestir themselves.

When I lived a boy on a Buckeye-Lake County farm, one of the neighbors was an old gentleman named Pelton. He had two sons, Wheaton and Bradford. It was a day when a heifer had been slaughtered on the Pelton farm, and hung in quarters to cool. Toward evening old Mr. Pelton—honest soul!—took one of the quarters on his back and started across for the house. On the way he was "held up," as it were, by a dozen half-grown pigs, also his chattles. The pigs, hungry, fierce, lean, were as active and voraciously enterprising as so many mountain lions. They fell upon Farmer Pelton in a body. After a brief skirmish, he dropped the quarter of beef. The pigs charged it, and began tearing off huge mouthfuls, while the agonized Farmer Pelton danced helplessly about the suburbs of the rapine.

"Brad! Wheat!" he yelled. "Come out here, an' come a-runnin'! Somethin's got to be did; an' that dod binged quick, too!"

Concerning the railroad situation, I desire to say over again what Farmer Pelton said of that illicit mix-up of beef and hungry hogs.

* * *

There is a general superstition that New York is ever and always a presidential pivot. History does not support this theory. The state was lost by General McClellan in 1864. Then in procession it was carried by Mr. Seymour, lost by Mr. Greeley, carried by Mr. Tilden, lost by General Hancock, carried by Mr. Cleveland, lost by Mr. Cleveland, carried by Mr. Cleveland, which brings us down to those years of political blizzards when Mr. Bryan lost it twice and Mr. Parker once. Until the Nebraskan's time the state swung like a pendulum between the parties.

* * *

Speaking of New York, it should be known to those curious on that score that the Democracy of the state—it stands equally true of town and country—is a hopeless prey to chipmunk politics. It is the New York age of ant hills. The Burrs and the Livingstons, the Clintons and the Marcs have left the stage. They have been succeeded by the Sheehans, the Ryans, the Belmonts, the McClellans and the Murphys. Mere rabbits, these. Or if not rabbits, weasels, with nothing so big as a coyote to yelp on a party hill.

* * *

Mr. Bryan is more of a money maker than is Mr. Taft. Not that this should count for or against either. To make money means nothing but money making. It is no sign of an infallible intelligence to grow rich. A red squirrel will jump about during October's thirty-one days, and lay up enough acorns to support fifty red squirrels fifty years. That red squirrel doesn't know why he does this. A gray squirrel lays up nothing; and, for the best of it, strolls languidly here and there, and only occasionally tucks an acorn or a hickorynut under a leaf—filing it away, as it were, for future reference. One goes into the snows rich, the other poor, by virtue of an instinct; just as some men make money, and others make none, by virtue of an instinct. It's no evidence of brains one way or the other. I've seen gentlemen in Congress, and very fair statesmen, at that, when they were not thinking of a reelection, who couldn't have made two dollars a day at any trade or calling in the world. On the opulent other hand, there be folk who make money as readily as some people make trouble, and who only escape being howling idiots by never howling. Also, there is such a thing as being overrich. Some wise, good soul ought to go into our colleges and endow a Chair of Trade; not to teach boys how to make money, but how much money to make. One can make too much money, just as one can drink too much rum; and so we have money drunkards, just as we have rum drunkards.

* * *

CECELLA'S THRAshING DINNER

BY HILDA RICHMOND

"THIS is the last time I shall ever ask you to be my wife," said the young man solemnly. "I shall always love you, and you know it, but my self-respect demands that—"

"Seems to me I have heard those words before," said the girl, with her pretty head tilted to one side and a look of abstraction on her face. "Who was it said something just like—"

"I mean it this time," said Horace Page shortly. "If any one ever proposes again in this combination, you will be the person. You have laughed at me and walked over me for the last time."

"Well, leap year isn't so far in the future," said Cecelia Winton with a hopeful look. "Why in the world are you so cross this morning, Horace? It's too warm to get red and angry over nothing. Did I tell you what our cook said the other day when you banged the door after you? She said, 'Miss Sissy, dat man sure to break de breakfast dishes by an' by if you done take him.' You should learn to control your temper."

"And be like that ladylike Reginald Fitzgerald!" stormed Mr. Page. "No, thank you! If occasion demands that the breakfast dishes be broken, I imagine there will be a smash-up. Good-by!"

"Don't be in a hurry," urged the hostess. "By the way, I am going to spend a week with Aunt Julie on her farm next month, so if you should happen to be in that neighborhood, stop and see us. Mr. Fitzgerald has relatives near there, I believe, and it is likely you will meet other friends."

This time the door banged in dead earnest, and Horace Page strode down the street to his office, making all sorts of vows never to look at Cecelia Winton again, much less ever give her another chance to laugh at him.

And he kept his word! In the course of time Cecelia dutifully went to visit her old aunt in the big, comfortable farmhouse, and listened to that lady's caustic remarks about the worthlessness of city girls, without a word in reply. Aunt Julie was noted for her plain speaking, and her nieces usually avoided her, but Cecelia had been coaxed by her father to go to the country. Aunt Julie had been very kind to Mr. Winton when he was an orphan lad years before, and that busy gentleman now sought to pay his debt of gratitude by sending his daughter to the kind-hearted but crusty old lady. Cecelia had not been in the farmhouse for years, and only the thought of her father's wish nerved her for the visit.

"Mary Ann Jenkins wants me to come over and spend the day with her tomorrow, Cecelia," said Aunt Julie, breaking in on one of her niece's numerous reveries. "Do you think you could manage to cook enough food to keep yourself from starving if I should go? Town girls would starve to death, I reckon, before they would spoil their hands."

"Go, by all means, Aunty," said Cecelia. "I can cook lots of things, and with your good bread and butter I wouldn't starve, anyway."

"Well, I believe I will," said the old lady more graciously. "I'll only be gone a day and you surely can manage as long as that."

Hardly had Aunt Julie departed on her twelve-mile drive before a procession turned into the yard that struck terror to the heart of Cecelia. First came the lordly traction engine, puffing and panting as it drew the separator, water tank and all the thrashing outfit to attack the long stacks of wheat down in the field nearly half a mile from the house. No one dreamed of such a thing at the farmhouse, for the hired girl was away and the tenant had not been notified. The owner of the thrashing outfit was "a law unto himself," as most of his patrons knew, but he seldom descended upon his victims without a few hours' warning.

"Twelve men to dinner besides the neighbors," said the tenant during one of his frantic trips to the house for twine or water or matches, "and they always want it early. I guess you can tell your aunt to count on about fifteen or eighteen."

Cecelia could have sat down to weep, but she reflected that that would do no good. She had not mentioned to Aunt

Julie that Mr. Fitzgerald and some friends were to have a little picnic that day, and she was to be one of the party. Now she would have to give up the picnic and stay at home to get dinner for a lot of uninteresting men. That she could get the dinner she never doubted, for her lessons at cooking school, at which Aunt Julie sniffed, would surely help her out in the emergency, and besides she had helped with picnics and receptions where fifty or more were served. Fifteen men could be easily provided for, but she did not like to miss the picnic.

"I'll have to begin at once," she said, putting on a big gingham apron. "Let me see. The bread? Fortunately there is plenty," and she laid three medium-sized loaves on the clean table. "Meat? Bless my life! I had almost forgotten those two young chickens I got Mrs. Kirk to fry for me for the picnic!" she exclaimed joyfully. "Thank goodness! With the bread and meat in sight the rest will be easy. I wonder if there will be enough to go around." She began poking at the diminutive pieces of chicken on the platter she hastily brought from the pantry. What am I thinking of? Of course there will be enough. If two

then she turned grimly to her duties. She watched all the morning for some neighbor or any one going toward town whom she could ask to get her the coffee and sugar she wanted, but no one seemed to be going that way. At last she gave up, and prepared to serve only water as a beverage, for the clock was striking half-past ten, and in an hour the men would be coming up to dinner.

"Hello, Cecelia!" said a familiar voice from the doorway. "I just heard from Reggie of your predicament, and came to help you."

"I don't need any help, thank you," said Cecelia coldly. She was conscious of a smudge on her nose and a general air of hurry and worry as she looked at the big form shutting out the sunlight. "I have everything ready."

"Where—where is the food?" asked Horace Page with wide-open eyes.

"On the table!" said Cecelia shortly. The young man swept the dining table with a glance, and all he could see was neat little piles of thin sandwiches, a plate of bread, the slices cut in halves, a glass dish of delicious-looking apple sauce, a bowl filled with something the like of which he had never seen, and plenty of empty space on the snowy cloth.

stove. "Take those sandwiches off the table, and hurry some bread into the dining room. I'll clear out before the men come. Child, did you ever see thrashers eat? You'll need all this stuff, and more, too. Here! I'll grind some coffee for you! Hasn't your aunt some pickles and stuff like that canned? The things on the stove and in the oven will take care of themselves. You crowd that dining table full of jellies and butter and pickles and everything."

Cecelia's brain was in a whirl, but she obeyed. She couldn't do anything else with that masterful voice in her ears. She recklessly opened cans, cut bread, made coffee and tried to keep an eye on the men hurrying from the field. The auto vanished just as they were coming up the lane, and Horace cried out, as he was leaving, "I'll be back for the pans and kettles. Don't wash them."

The men washed up in the shady back yard, and came trooping into the cool dining room—eighteen stalwart men and the shock-headed boy. After the first few minutes Cecelia collected her wits and urged them to eat in hospitable fashion. The huge roast, the cold ham, the potatoes, the pies, the sweet potatoes, the tomatoes, the cabbage, the cookies and all the other food Horace had brought vanished like dew in the sunshine. Cecelia's elaborate little dessert was mistaken for some sort of a "spread," and was thickly applied to the big slices of bread she hastily cut in the kitchen to replenish the supply on the table. Altogether that meal was a revelation to her. She began to quake lest the food would not hold out, but when the last man declared he was "full" there were a few fragments of meat and some vegetables still clinging to the kettles and pans in the kitchen.

"Pretty good meal for a city girl!" said a man near the kitchen window, when they rested a few minutes before going back to work.

"Yes," said another. "I've always had an idea city girls didn't know much about cooking, but this one does pretty well. I must get my wife to ask her what sort of preserves she had—that yellow sticky stuff."

"I just felt it in my bones this morning that something would happen!" said Aunt Julie, arriving in time to see the last of the dishes going back into the cupboard. "Jim Smith stopped me up the road a piece to tell me all about it and brag on your cooking. He said your thrashing dinner was better than mine, but I don't see how you managed it. I've always been considered a smart housekeeper, but I never got dinner alone for thrashers. And at such short notice, too! He said your sweet potatoes were just splendid and your gravy delicious."

"I think they all had plenty to eat, Aunty," said Cecelia modestly. "I am glad you are home, for papa sent a telegram for me to come home at once. Mr. Page brought it out to me, and he will take me to town in his auto. Did you have a good visit?"

"Yes, rather; but something was pulling at me all day," said the old lady, still bewildered and amazed. "Child, I can't see how you managed! Jim Smith thinks no one can cook like his wife, but he had to admit you are her equal. Why does your pa want you to come home? You must come soon again. I'm going to alter my will to-morrow and leave the farm to you, Cecelia. You are the only girl in the whole family who could do such a thing, and I wouldn't have believed it of you if Jim Smith hadn't told me."

On the way to town, when Cecelia begged to know how he had managed to be there so promptly with the food, Horace confessed that he had bribed the proprietor of a restaurant to give him his entire dinner and keep silence. "I've seen thrashers eat at my grandfather's farm," he said, "and I didn't want you to get into trouble by not having enough. I do think it isn't fair, though, for you to get all the praise and the farm, besides."

"I don't, either," said Cecelia, "but I tell you what I'll do. Horace! I'll give you a share in my prospect of getting the farm. Leap year is too far away, and—"

"Do you mean it?" began Horace, but one glance at her burning face showed she was in earnest.



"Horace Page began unloading parcels of all sorts and sizes"

chickens are enough for twenty people at a picnic, they surely will do for fifteen men. Besides, I intend to slice that cold ham in the pantry."

All this time she was rapidly making plans, and presently twenty potatoes were pared and soaking in cold water. Then she put the extra leaves in the dining table and set it quickly. "I think Aunt Julie would be surprised if she could see her city nice just now!" she said proudly, as she surveyed the long table. "She'll find out a few things when she gets home this afternoon."

"Not ready?" said Mr. Fitzgerald from the doorway, looking at the young lady with sleeves rolled to her shoulders and a big apron covering her dress. "The wagon is at the gate."

"I'm sorry, but I can't go," said Cecelia. "The men are down in the field thrashing wheat, and I will have fifteen to dinner. Aunty went away this morning and I am all alone."

"Come on anyway," he urged recklessly. "Let them get their dinners at some farmhouse in the neighborhood."

"No, I cannot," said Cecelia decidedly. "I must find some one to go to town for coffee and a few other things, so you had better go on with the party." In her heart she felt sure he would volunteer to go, but he had no thought of missing the picnic to do some errands to feed a lot of hungry men. Cecelia saw him go with polite regrets on his lips, and

Then he looked at the shining kitchen stove with a few kettles and pans on it, and the platter of chicken waiting to be warmed in the oven later, and he whistled long and loudly.

Without a word he hastened to his auto waiting at the front gate, and two minutes later Cecelia saw him going like mad in the direction of town. "Provoking thing!" she said, wiping away a few tears. "He might have asked if he could do anything, at least. It's just as Aunt Julie says, men are all unreliable and of no account generally."

"Dinner ready?" said a shock-haired boy at the door. He had been sent for a pitcher of water, and hunger prompted him to ask the important question.

"Yes; you may tell the men to come up any time," said Cecelia. To herself she said, "I might as well have it over one time as another."

Just as the engine gave a series of snorts and shrieks, to warn all hands to get ready for dinner, an automobile dashed recklessly into the yard, and Horace Page began unloading parcels of all sorts and sizes from it. "Take that pan of chicken out of the oven, Cecelia!" he commanded, flinging wide the door of the big oven.

Cecelia obeyed in sheer astonishment. A huge roast of beef sizzling hot and surrounded with nice browned potatoes and sweet potatoes went into the oven, and big kettles began to crowd the top of the

From the Joke Makers

Was She Consoled?



MRS. NEWED (sobbing) —“Oh, J-John! The c-cat has e-eaten all the angel cake I b-baked this m-morning. Boo-ho-o-o-o!”

NEWED (consoling y) —“Well, don’t cry, dear! I’ll buy you another cat to-morrow.” —Chicago Daily News.

A Private Letter

A COLONEL on his tour of inspection unexpectedly entered the drill room, when he came across a

couple of soldiers, one of them reading a letter aloud, while the other was listening, and at the same time stopping up the ears of the reader.

“What are you doing there?” the puzzled officer inquired of the latter.

“You see, Colonel, I’m reading to Atkins, who can’t read himself, a letter which has just come from his sweetheart.”

“And you, Atkins, what in all the world are you doing?”

“Please, Colonel, I am stopping up Murphy’s ears with both hands because I don’t mind his reading my sweetheart’s letter, but I don’t want him to hear a single word of what she has written.” —Illustrated Bits.

“O Wad Some Power the Giftie Gie Us”

“I’S BEEN a sinnah!” vouchsafed a recently converted brother during an experience meeting in Ebenezer Chapel. “A heen-yus, low-down, contaminated sinnah fo’ lo dese many yeahs, an’ never knowed it!”

“Don’ let dat molest you, Brudder Newcome,” spoke up a sympathetically inclined deacon. “De rest ob us knowed it all de time.” —Tribune.

Not the Same

“RELATIONSHIPS are very confusing to the juvenile mind,” says a Brooklyn schoolteacher. “But there are not many children with so vague a notion in the premises as had a small girl who once came to me as a pupil.

“This little girl first appeared with a small brother, and she gave in their names as ‘Thomas and Margaret Johnson.’

“‘Brother and sister, I suppose?’ I said.

“‘Oh, no, ma’am,’ hastily replied the little girl, ‘we’re twins!’” —Harper’s Monthly.

A Spendthrift

PUBLICAN—“And how do you like being married, John?”

John—“Don’t like it at all.”

“Why, what’s the matter wi’ she, John?”

“Well, first thing in the morning it’s money; when I goes’ome to my dinner it’s money again, and at supper it’s the same. Nothing but money, money, money!”

“Well, I never! What do she do wi’ all that money?”

“I dunno. I ain’t given her any yet.” —Literary Digest.

Would They?

“WHERE are you goin’, ma?” asked the youngest of the five children.

“I’m going to a surprise party, my dear,” answered the mother.

“Are we all goin’, too?”

“No, dear. You weren’t invited.”

After a few moments’ deep thought:

“Say, ma, then don’t you think they’d be lots more surprised if you did take us all?” —Everybody’s.

Non Sequitur

TOMMY, very sleepy, was saying his prayers. “Now I lay me down to sleep,” he began. “I pray the Lord my soul to keep.”

“If,” his mother prompted.

“If he hollers, let him go, enny, meny, minny, mo!” —Harper’s Monthly.

Prudence

A TALL man, impatiently pacing the platform of a wayside station, accosted a boy of about twelve.

“S-s-say,” he said, “d-d-do y-you know h-h-how late this train is?”

The boy grinned, but made no reply. The man stammered out something about kids in general, and passed into the station.

A stranger asked the boy why he hadn’t answered the big man.

“D-d-d’ye wanter see me g-g-get me fa-fa-face punched? D-d-dat big g-guy’d t’ink I was mo-mo-mocking him.” —Everybody’s.

Stating the Case

“O H!” CRIES Miss. Minn. “Wyo.?” I say.

“I’m very ill,” says she, “And if my pain you would Alas,

Ruin quick for an Md.

This morning early I Ariz.—

Right Ga. of heart was I—

And made it my especial biz

To milk our Tenn. fat Ky.

Then, with the help of Cal. and Del., I did the Wash., and that

Was not a joke I Kan. you tell,

Indeed, it did Me. flat.

So when I found I must give Ore.,

Upon my bed I La.

Alas! I now am very sure

Such smartness does not Pa.”

—Elizabeth Hill in Life.

Who Was Abraham?

TEACHER (in Sunday-school class)—“Who can tell me anything about Abraham?”

FIRST SMALL BOY—“Used to know, but can’t remember now.”

TEACHER—“Perhaps some one can tell me the name of Abraham’s wife.”

SECOND SMALL BOY (promptly)—“Mis’ Lincoln.” —Life.

Giving Him a Chance

MRS. WILSON’s husband was often obliged to go to New York on business, and frequently did not reach his home until the arrival of the midnight train. Mrs. Wilson had been in the habit of sleeping peacefully at these times without fear, but a number of burglaries in the neighborhood during one of her hus-



band’s trips to New York had disturbed her calm.

On the night of his return Mr. Wilson was stealing carefully up the front stairs, as was his wont on such occasions, so that his wife would not be wakened, when he heard her voice, high and strained.

“I don’t know whether you are my husband or a burglar,” came the excited tones; “but I’m going to be on the safe side and shoot, so if you are Henry you’d better get out of the way!” —Youth’s Companion.

Sure of Her Ground

MISTRESS—“Jane, I saw the milkman kiss you this morning. In the future I will take the milk in.”

JANE—“Twouldn’t be no use, mum. He’s promised never to kiss anybody but me.” —Illustrated Bits.

She Followed Directions

DOCTOR—“The room seems cold, Mrs. Hooligan. Have you kept the thermometer at seventy, as I told you?”

MRS. HOOLIGAN—“Shure, an’ Oi hov, docthor. There’s th’ devilish thing in a toomblor ay warrum wather at this blissid innut.” —Judge.

Mrs. Porter’s Influence

“YOU say Mrs. Porter isn’t coming this afternoon?” Mrs. Wilson, the hostess of the sewing society, was helping Mrs. Deacon Taft discover a hidden hat pin.

“No, I guess not,” Mrs. Taft replied, pulling off her gloves. “I saw her drive by with Mr. Porter about an hour ago.”

“I asked the deacon,” she continued after a minute, “where he supposed they were going, and he said like as not to Mrs. Turner’s. You know her Luelly is bad again.”

“But I should think they could have waited until to-morrow, or Mr. Porter could have gone by himself.” It was Mrs. Wilson who spoke, and Mrs. Taft replied:

“Well, of course some folks’ ways ain’t other folks’ ways, but I don’t think of going along every time the deacon hitches up the horse.”

“I should hope not!” Mrs. Wilson exclaimed. “I guess your house wouldn’t look so spick and span if you did.”

“Well, I do try to keep things up,” Mrs. Taft answered proudly, “but I can’t beat you.”

The room was dark and musty, but Mrs. Taft knew that the carpet was spotless and the furniture dustless.

“Yes,” Mrs. Wilson, too, spoke a little proudly, “I try to keep my house clean. I don’t leave it open for the flies and the dust, like—well, like some houses I know of.”

“The deacon says we’ll have to repaper the parsonage before long.” Mrs. Taft was following Mrs. Wilson into the parlor now. “And,” she spoke rather low, “it’s all unnecessary, too, for we fixed up the study and bedrooms only three years ago.”

They had reached the parlor now, another dim and musty room, where a dozen ladies of the Wadleigh Baptist Church were gathered about the wood stove, which was doing its best to dispel the dampness. Two of the thick green shades had been partially drawn from the windows, but especial care had been taken that no ray of sunlight should creep in upon the sacred Brussels carpet.

“Did you say Mrs. Porter was not coming?” The widow of a former minister looked up from the towel she was hemming.

“I’m afraid so.” Mrs. Taft seated herself, adjusted her spectacles, and began to thread her needle. “We saw her drive by with Mr. Porter about an hour or so ago.”

“Well, now, I don’t think that’s right. When Mr. Bailey was living—”

“Have you got a towel for me to hem?” Mrs. Taft interrupted. She had heard so many times of Mrs. Bailey’s achievements when a minister’s wife that she was glad of an excuse to change the subject. “Of course it isn’t so much Mrs. Porter’s being absent from one meeting,” Mrs. Wilson began quietly but earnestly; “it’s the influence she has over others.”

“Yes,” Mrs. Bailey agreed, “if people see her stay away to go out driving, no matter if she is going to see a sick girl, why, they’ll stay away and go out pleasure-seeking, like as not.”

“Yes, it’s the influence over others.” Mrs. Taft broke in. “Of course, Mr. Porter’s a fine preacher. He’s a good pastor, too, and a nice and respectable man, but I’m not quite sure about Mrs. Porter’s influence—”

“Well, if you’re not quite sure Mrs. Porter’s influence is in the right direction, I am.”

The dozen ladies looked up from their towels simultaneously as Mrs. Barton, the wife of the rich man of the church, who lived in the big house next to the parsonage, spoke earnestly.

“What do you mean?” Mrs. Taft questioned, and Mrs. Barton went on quickly:

“Of course, her influence may not stand for just what we’ve been brought up to think that it should. Perhaps she doesn’t go to meeting quite so often as her predecessor, who died of the pneumonia she caught plowing through the snow to church one Sunday. Oh, yes she did, ladies,” Mrs. Barton continued, in spite of the murmurs of protest. “You may not want to acknowledge it, but it’s true, just the same.”

“But,” she went on after a moment. “I want to tell you what Mrs. Porter’s influence did for me, and then, perhaps, you will think of her a little differently. You know I always used to be ailing and sickly.” She stopped a moment as the women nodded their assent.

“Well, when Mrs. Porter came to live at the parsonage, being right next door, I used to watch her a good deal. The first thing that I noticed was that she kept her parlor open all the time. All

the rest of the ministers’ wives had kept the blinds shut and the curtains down, and had lived in the little sitting room with its two north windows. Then I also noticed that Mrs. Porter used the big southeast room over the parlor for a bedroom, and every morning pillows and bedclothes were in the windows in the sunshine. All the rest of the ministers’ wives had used the little north room next to the sitting room. All the rest of the ministers’ wives had been sallow and sickly, just as I was myself, but Mrs. Porter was pretty and healthy. Well, I got to thinking about this a great deal, and then one day I went over and had a heart-to-heart talk with her.”

Mrs. Barton stopped a minute and looked at the interested faces about her.

“And what did she tell you?” Mrs. Wilson voiced the question that seemed on all their lips.

“She took me into the big front room with its brown ingrain carpet—she said she didn’t want colors that would fade—its open piano, its books and flowers, and we sat down with the glowing sunshine all about us. Then she told me how she had learned at a big sanatorium, where they heal the body and help the soul, that sunshine was life and health and happiness.

She told me that she used to live in darkened and ill-ventilated rooms for fear of fading her carpets and injuring her furniture; that she used to be sick and unhappy most of the time, but that, as she had let the sunshine into her home, she had also let it into her life.”

Again Mrs. Barton stopped and glanced at the women, who were listening intently, and again Mrs. Wilson spoke for the others.

“And then what?”

“And then,” Mrs. Barton answered, “I went home determined to try what fresh air and sunshine would do for me. At first John didn’t quite like the idea of my taking down the green shades that had been his grandmother’s, and putting up some white ones. He was a good deal surprised when I made some linen covers for the upholstered furniture, and when I threw open the shutters to let the sunshine in upon the room that for generations had been kept in musty dimness. He almost rebelled when I took the furniture from our little north bedroom and put it upstairs in the big southeast room over the parsonage. But I persisted—put a radiator into the stovepipe which came up from the new coal stove, and made the place so cheery and comfortable that he had to confess, after a little, that he was glad of the change.”

As Mrs. Barton finished, she smiled into the faces about her, and her smile was almost a gleam of sunshine.

“You are better than you used to be?” It was half a question and half an assertion from Mrs. Wilson.

“Yes, thanks to Mrs. Porter’s influence, I am better in body and soul,” Mrs. Barton replied.

“You certainly look better.” Mrs. Wilson was gazing into the bright eyes.

“Yes,” and the eyes grew softer and the cheeks flushed a little, “and I don’t mind telling you that John and I are a good deal happier than we used to be. I don’t know as we go to church any more, but we’re better Christians and some way our home seems to mean a good deal more to both of us now that we have let the sunshine in.”

As she stopped, there was silence for a moment, and then Mrs. Wilson spoke.

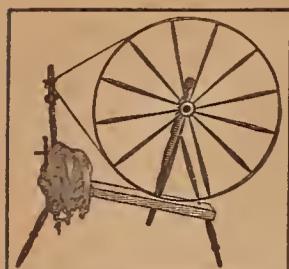
“I suppose,” and her words were almost a sigh, “I suppose there is a good deal in what you’ve told us.”

Then she started up energetically. “I wonder,” she laughed a little, “how some sunshine would seem in here?”

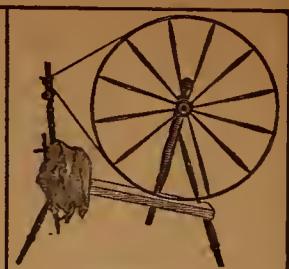
As she spoke she gave a determined pull to one of the thick green shades. In an instant the room was aglow with the afternoon sunshine, which lighted the worn faces of the workers and seemed to soften the lines of care on so many foreheads. The sunshine also streamed across the room to the open door in which Mrs. Porter suddenly appeared, radiant and happy.

“I’m so sorry to be so late,” she began, with gentle apology, “but Luelly Turner wanted me to come with Mr. Porter, and the roads are so much worse than we thought—”

“Never mind, my dear.” Mrs. Wilson was hurrying toward her with outstretched hands. “I’m sure a sight of your face has done the poor girl a lot of good, and I’m also sure,” she smiled down into the sweet, uplifted face, “I’m also sure there’s more ways of helping and being an influence in the parish than just going to meetings and societies.”



The Household Department



Some Delicious Pickles

PROBABLY we all know that pickles have been severely condemned as articles of diet, but like many other piquant food accompaniments, they have been given a bad name more because of their abuse than their use. Unless one's digestive organs are exceedingly delicate, an occasional pickle is unlikely to cause any difficulty, and not infrequently, when the appetite requires some coaxing, it may prove decidedly beneficial as an appetizer. Home-made pickles, however, are always to be preferred, as one may then be reasonably certain that nothing injurious has been used in preparing them.

An appetizing pickle to serve with beef is made with green tomatoes. To each peck of tomatoes allow twelve large onions, four pounds of brown sugar and one gallon of best cider vinegar. Slice the tomatoes and onions very thin, and arrange them in layers, with salt sprinkled between, in a granite preserving kettle, using one and one half cupfuls of salt to one peck of tomatoes. Pour over enough boiling water to scald them well, and let them stand until morning. Drain off all the liquid in the morning, wash the vegetables well in cold water, and let them drain thoroughly in a colander. Take enough vinegar and water, half of each, to cover them, add one cupful of sugar, and let it come to a boil. Drop in the tomatoes and onions, and let them scald for twenty minutes. Skim them out, and again drain them thoroughly in a colander. To one gallon of fresh vinegar add four pounds of sugar, some broken stick cinnamon and a few cloves; let come to a boil, add the vegetables, and let simmer until the tomatoes are tender—about ten minutes will be time enough. Bottle, and seal tightly.

A delicious pickle may be made with late cucumbers. Pare one dozen ripe cucumbers, chop them very small, and press out all the juice possible. Measure the pulp, and to each quart add four large white onions finely chopped, one sweet red pepper freed from seeds and cut fine, one heaping teaspoonful of salt and one eighth of a teaspoonful of cayenne. Stir all these ingredients well together, and nearly fill stone or glass jars with them, then cover to overflowing with cold vinegar, and seal tightly.

Green peppers may be made into very good pickles. Cut the tops off two dozen large ones, scoop out the seeds, and let soak in cold salt water over night. Slice a firm white cabbage very fine and chop it small, and mix with it one ounce of white mustard seed and one ounce of cloves; put this into the peppers, and tie on the pieces that were cut off. Cover with cold boiled cider vinegar, and seal tightly.

Another good way to use the green tomatoes usually so plentiful in the late autumn is in making mustard pickles. A delicious mustard dressing is made thus: Mix together one cupful of sugar, three fourths of a cupful of flour and a scant half pound of mustard wet to a thin paste with a little vinegar, and stir until perfectly smooth. Heat two and one half pints of the best vinegar to the scalding point, and then stir smoothly into the mustard paste. Cook, stirring constantly, for five minutes, and add one heaping teaspoonful of salt. The tomatoes should have been coarsely chopped the day before (allowing to each four quarts six large chopped onions), sprinkled with salt, and enough boiling water added to scald them. In the morning drain, wash them thoroughly, and scald in half vinegar and water until tender. Then stir them into the mustard dressing while it is still hot. Put into glass jars, and seal.

To Freshen Bread

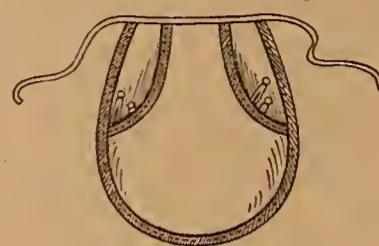
WHEN a large quantity of home-made bread has been baked at one time, some of it, if kept long, is sure to become hard and unappetizing. This can be made as good as new by a very simple method. Dip the loaf in cold water, put it in a pan in the oven, and bake until it is heated through. After it has been taken out, wrap it in a damp cloth, and when cold it will be quite as good as when first baked.

If hot bread is desired for breakfast, the above method may be used for reheating. Bread, muffins and rolls reheated in this way are just as appetizing and are said to be more healthful than freshly baked hot breads. Certainly less time and trouble are necessary to serve hot bread by this method than to mix and bake it fresh.

Helps for the Housewife

A Clothes-Pin Apron

THE clothes-pin bag is a time-honored institution, but it is extremely awkward to use when hanging out clothes, and the clothes-pin apron which is made by turning up a long piece of material to make one long pocket straight across the front is little more convenient, as the



pins are likely to drop out of it when one stoops over to reach for the clothes. The apron pictured above is quite as simple to make as the other, and is much handier, as it is so constructed that the pins will not drop out.

It should be made of ticking or some other strong, heavy material. The apron is made in two large pieces. The first one is the under piece, which is cut in the shape shown in the illustration; the second piece is the same shape as the first around the bottom, but is cut out at the sides as shown in the illustration. These two pieces are sewed together around the bottom, as far up as the place where they are cut out, and are joined at the top by the belt. Thus a large pocket with two side openings is formed. The apron and pockets may be bound with red calico, and a loop to hang it up by should be sewed to the back of the belt.

A Home-Made Soap Rail

A LITTLE time saver for the kitchen is the home-made soap rail illustrated below. This is a useful little article which can be very easily and cheaply constructed. Use two pieces of wood three



eighths by four by sixteen inches, and three eighths by five by sixteen inches, to form the back and bottom respectively. Seven small pieces three eighths by two by four inches form the partitions. These are nailed with small nails the same distance apart from each other. Holes are bored in the back, so that it may be slipped over nails driven in the splash board. Holes are bored in the bottom, to permit of drainage into the sink; thus the soap is always at hand and clean.

An Adjustable Vine Trainer

THIS simple little vine trainer is very convenient and saves much labor. It can be used for fastening the strings or wire netting for the vines of a porch. It is made of a strip of wood one inch square and about six feet long, with a strong screw eye eighteen inches from each end. Drive two nails into the upper part of the porch the same distance apart as the screw eyes; then, after tying the string through the strip, lift it up and hook the screw eyes over the nails. Fasten the lower ends of the string into the ground with small pegs, and train the vines on them. One of the advantages of this trainer is that it precludes the necessity of stringing a wire netting across the porch to accommodate the further growth of the vine. By this arrangement the strings can be lengthened as the vine



grows, and there need be no unseemly expanse of string or wire up the side of the house. Another advantage of this adjustable trainer is that in case the house is to be painted, the vines may be lowered without harming them.

A Burglar-Proof Door

For those who fear the breaking in of thieves, house doors can be made burglar proof in a very simple way. Place a stiff wire shaped like a hairpin over the handle of the knob, putting the ends through the key after locking the door. This makes it impossible for the key to be pushed out or turned in the lock. It can be easily seen that the only way a



burglar can pick a lock from the outside is by pushing out the key and maneuvering with the mechanism with a wire or some other forcing instrument. The device explained and illustrated above keeps the key from being pushed out, and thus prevents the possibility of the door being forced by picking the lock.

Some Easy Ways

MANY methods of making washing easier have been advocated in the magazines and papers, but the following method seems best to have stood the test of long and wide experiment. Fill the boiler two thirds full of soft water. In a basin shave fine three fourths of a bar of soap; add to this one half cupful of coal oil and one quart of boiling water. Stir this until dissolved, then pour about half of it into the boiler. After sorting the clothes, put the finer pieces into the boiler first. Never put in so many pieces that they cannot be stirred easily and loosely. When they have boiled for about ten minutes, take out and put into a tubful of cold water. Then put more suds and another batch of clothes into the boiler. While these are boiling, look over the things that have been boiled. If there should happen to be any dirt on some of them it will fall out with a very slight rubbing. Rinse, blue, and then starch as usual.

A pinch of borax in cooked starch will tend to make the clothes stiffer and whiter.

An easy way to finish the fringed borders of towels, napkins, etc., is to stitch them on the machine as near as possible to where the threads have been drawn.

The white of an egg can be beaten more quickly if a pinch of salt is added to it. It is almost impossible to slice hot

brown bread with a knife, as both the knife and bread become sticky. Try cutting it with a piece of fine steel wire. The same piece of wire may be kept and used over again.

The problem of keeping hard-wood or painted floors bright and shining is a difficult one. It may be solved, however, by adding two tablespoonfuls of furniture polish to a pailful of tepid water with which the floor is mopped. No soap is to be used on these floors.

There is a very simple method of mending holes in lace curtains—that is, holes that are too large to be darned. Cut a piece of net as nearly like the net of the curtain as possible, and just a bit larger than the rent. Dip this piece of net in starch water, lay it on the hole or worn place, and before it is quite dry, press with a warm iron. The patch will remain until the curtain is again laundered, when it may be caught on with small stitches.

Heat the knife before cutting new bread; it will prevent crumbling.

Carpets and rugs can be cleaned by the following method without being taken up: Sprinkle them generously with corn meal that has been well dampened in a weak solution of ammonia and water. Leave this on for a few moments. After sweeping it off you will be surprised at the brightened appearance of the carpet or rug.

Green-Corn Variations

GREEN-CORN SOUP—Split the grains of a dozen ears of corn, and scrape from the cob. Boil the cobs in one quart of water for ten minutes or longer; strain the water, and add to it one quart of sweet cream, or milk with one large tablespoonful of butter; add the corn, and cook for fifteen minutes; thicken with one tablespoonful of flour wet with a little milk; season to taste.

CORN-AND-TOMATO SOUP—Cook until done one quart each of tomatoes and green corn in one quart of water; season to taste, and just before serving add one cupful of cream.

BAKED CORN—Fill a buttered pudding dish with alternate layers of green corn and rolled crackers, adding salt, pepper and butter. Pour over all one pint of cream or milk, and bake slowly.

CORN A LA SOUTHERN—Chop one can of corn or the same amount of fresh corn, and add two eggs slightly beaten, one teaspoonful of salt, one eighth of a teaspoonful of pepper and one and one half tablespoonfuls of melted butter. Then pour on gradually, while stirring constantly, two cupfuls of scalded milk. Turn into a buttered pudding dish and bake in a slow oven—that is, at a low temperature—until firm, the time required being about thirty-five minutes.

CORN FRITTERS—One egg well beaten, two cupfuls of sweet milk, two cupfuls of grated corn, two teaspoonfuls of baking powder sifted with flour enough to make a stiff dough. Drop into hot oil, and when done on one side, turn over until both sides are nicely browned. Serve with butter or powdered sugar.

MOCK OYSTERS—One pint of grated green corn, two tablespoonfuls of soft butter, the yolks of four eggs beaten smooth, and flour enough to make a stiff batter. Season with salt and pepper. Drop by tablespoonfuls into boiling oil, and fry until a nice brown.

TOMATOES STUFFED WITH CORN—Set large, smooth tomatoes in a buttered pudding dish; cut a slice from the top of each, scoop out the seeds, leaving a thick cup. Fill with grated corn seasoned with butter, pepper and salt, cover with the tops, add a little water, cover the dish, and bake in a moderate oven for an hour.

CORN SALAD—Cut into small pieces three stalks of celery, and mix with half a can of corn, or with tender cooked green corn, adding a liberal dressing.

GREEN-CORN BATTER CAKES—Boil six ears of green corn, split the grains down the middle, and scrape into a dish. To each cupful of corn add two eggs, one cupful of flour and enough sweet milk to make a thick batter. Use also one teaspoonful of soda and two of cream of tartar (or buttermilk may be used with the soda alone). Bake on a hot griddle, and butter while hot.

CORN PIE—Line a pudding pan with rich biscuit dough, fill with well-seasoned grated corn, add bits of butter over the top, cover with a crust, and bake.

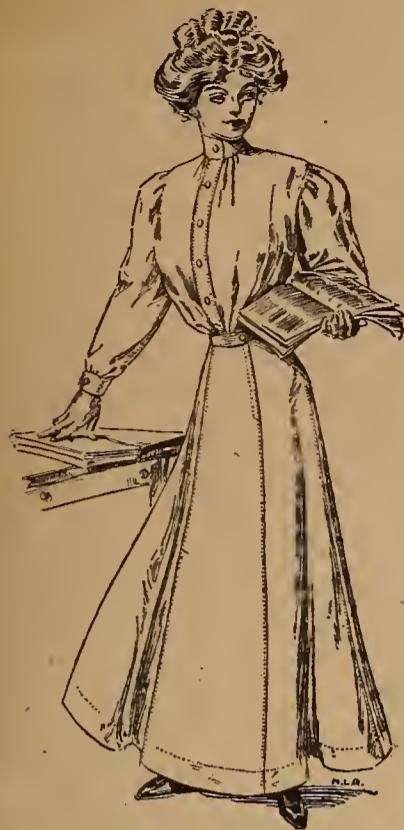
GREEN-CORN PUDDING—Cut from the cob three pints of corn; add three well-beaten eggs, one cupful of cream, two heaping tablespoonfuls of butter and one of sugar, and a pinch of salt. Bake for an hour in a covered dish, and serve with or without sauce.

CORN OMELET—Chop fine one half cupful of green or canned corn; add the beaten yolk of one egg, two tablespoonfuls of rich sweet cream, salt and pepper; add the white of the egg beaten to a stiff froth, and pour onto a very hot griddle, well buttered, and when well browned turn one half over the other, and serve. This is a nice way to use up a little cold corn left over.

The Care of Lamps

THE care of lamps is an extremely important detail in the mechanism of the household. Unless it fulfills its duty of burning clearly and brightly, a lamp is of no use whatever. And it cannot fulfill this duty unless all of its parts are kept free from dust and superfluous oil. If a lamp burns with a disagreeable oily odor, and there is no leak or other obvious defect, its parts need boiling. Take the lamp apart as much as possible, put the pieces in a kettle, cover them with cold water to which a handful of washing soda has been added, and bring to a boil. Remove the parts, and after drying thoroughly, adjust them. Very often this treatment is all that a "smelly" lamp requires. All lamps should be boiled in this way about once a month.

Miss Gould's Fashion Page



No. 1086—Plain Housework Dress
Sizes 32, 34, 36, 38 and 40 inch bust measures.

GIRDLES, belts and sashes are all very fashionable this season. The narrow belt is no longer the vogue. Wide effects are in demand. Many of the models are made of folds of satin, and fasten at one side with a flat satin rosette and two long ends. Often the girdle ends and sash ends are finished with fringe.

The early fall imported costumes show much braiding and many buttons as their trimming. Very large buttons are used, and among the novelties are bone buttons having a satin center. The satin is either black or matches the color of the gown.

For fall many somber colors will be worn and very much black. Smoke gray will be in favor for tailor-made suits, and both dark blue and deep green will be much worn. Revers and cuffs on tailored suits will often be of black satin. Paris is showing these dark tailored suits with a touch of bright color in the waistcoat, which may be of satin or velvet.

In skirts for fall many models will button straight up the front. In the way of a little neck fad velvet dog collars are to the fore. They are made of black velvet ribbon and fasten at the back with clasps and bows. They are worn quite as much with high-necked dresses as for evening wear when the waist is cut out a little at the neck.



No. 1126—Shirt Waist With Tab Trimming
Sizes 34, 36, 38 and 40 inch bust measures.

No. 892—Plaited Skirt With Trimming Band
Sizes 22, 24, 26 and 28 inch waist measures.

For outdoor sports and general summer wear the dress illustrated in pattern Nos. 1171 and 1172 will be found both practical and pretty. The material may be Holland linen in its natural color, crash, cotton poplin or light-weight striped serge. The double-breasted blouse is cut in a deep V in front and made with a rolling collar, but the pattern also provides an adjustable shield and standing collar. The short walking skirt is cut in nine gores, with a plait on the back edge of each gore, and there are inverted plaits at the back. The fastening of both the blouse and the skirt is in the front at the left side.



No. 1171—Double-Breasted Blouse With Rolling Collar
Sizes 32, 34, 36 and 38 inch bust measures.

No. 1172—Nine-Gored Plaited Skirt
Sizes 22, 24, 26 and 28 inch waist measures.

SUMMER CATALOGUE OF MADISON SQUARE PATTERNS

Our new summer catalogue cannot help but be invaluable to the woman who makes her own clothes. We will send it to your address for four cents in stamps. Order patterns and catalogue from the Pattern Department, FARM AND FIRESIDE, 11 East 24th Street, New York City.

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When ordering be sure to comply with the following directions: For ladies' waists, give bust measure in inches; for skirt pattern, give waist measure in inches; for misses and children, give age. To get bust and breast measures, pit a tape measure all the way around the body, over the dress, close under the arms. Order patterns by their numbers. Satisfaction guaranteed or money refunded.

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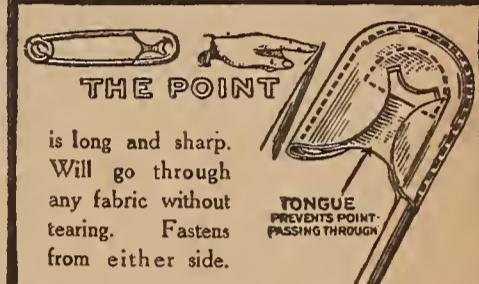
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Things Worth Knowing

Concrete for House Building

Each summer brings changes in the design of houses of moderate cost, and in the materials used in their construction.

Within recent years concrete has been used extensively, and it is becoming more and more popular. Concrete is only a mixture of cement, sand, stone and water, the proportions varying with the particular application. For ordinary building purposes, one part of cement, two and one half to three parts of sand, and five to seven parts of stone, moderately moistened with water, make a good mixture.

Concrete has been used for centuries. During the days of King Solomon, walls and arches were built with it, and many of them are still in a good state of preservation. The invention and development of machinery for making the mixture and molding it into blocks has rendered it possible to use quantities of concrete. During the past year thirty-five million barrels of cement were used in the United States alone, as compared with about two hundred thousand twenty-five years ago. Millions of dollars are now invested in plants manufacturing cement, concrete mixers and molding machines.

A better house can be built of concrete for the money than of wood, brick or stone. A concrete house can be erected at a cost nearly as reasonable as a wooden one, for about one half the cost of brick and one fourth the cost of stone, and it has the further advantage of costing less to keep in repair. Sand and stone are generally found near the building site, so the freight and cartage bills can be kept at a minimum. Again, only a few skilled laborers are needed in mixing and placing the concrete, while with brick or stone high-priced men are required, and the waste of materials is much greater.

Hollow, machine-made blocks, from sixteen to twenty-four inches in length, and from six to twelve inches in thickness, are used. Now an attractive house can be built with them for about four thousand dollars. A few years ago such a building could not have been undertaken for two or three times as much. It is easy to obtain a variety of architectural effects by using different-shaped molds for the blocks and adding colors to the concrete.

The air spaces in the blocks have many advantages. The cushion of air keeps the house at a more even temperature, making it warmer in winter and cooler in summer. The spaces are also sometimes used for electric wires and ventilating ducts, etc.

Concrete houses are well adapted for the country, where fire departments are not as efficient as they are in cities. Concrete is non-combustible, and such houses may be insured for lower rates than wooden structures.—Chas. H. Hughes in the New York Post.

The Average Length of Life

The man who lives until he is more than a century old and the child who dies in infancy are alike included in the law of averages. They balance each other's chances, as it were.

Of 100,000 people living at the age of ten, only 95,614 will live to the age of twenty-one, only 82,284 will be living

at forty, only forty-nine will be living at ninety-six and only nine at ninety-seven. At thirty, the average man may take it that he has under thirty-five years to live; at forty, under twenty-eight years; at fifty, under twenty-one years; at sixty, under fourteen years.

In each and all of these cases how he lives will determine whether he will have a longer life or a shorter life, but the average will infallibly work out within a space of ninety years.

The Glacier National Park

The wildest and most beautiful mountain region of the Far Northwest will be converted into a national park if the recommendation of the secretaries of the interior and of agriculture are favorably acted upon next winter by Congress. The proposed park comprises about a million acres of the famous Lake McDonald region of northwestern Montana, which for the wild beauty and rugged grandeur of its scenery is unsurpassed in the United States. Here lofty snow-capped mountains lift their craggy heads above the main chains of the Continental Divide and the Livingston Range, while some sixty glaciers give meaning to the name of this attractive spot.

Lake McDonald, ten miles long, is the largest of the two hundred and fifty lakes within the area. Reconnaissance surveys of the proposed park have been made by topographers of the United States Geological Survey, who report that the region is inhabited by many wild animals. In the higher barren rock area the fast-disappearing white goat is found in considerable numbers, while slightly lower down the Rocky Mountain bighorn makes his home. In the valleys and on the lower spurs deer, moose and other animals abound, and the great grizzly roams through the entire area, the acknowledged monarch of these wilds. If protected by law, these game animals, it is believed, will increase to such an extent as to furnish in their overflow from the park a perpetual supply to sportsmen.

The region is of no agricultural value, and contains no valuable mineral deposits which would be lost or neglected by the creation of the park. At one time copper prospectors flocked into this section, but found nothing to warrant the belief that copper ore existed here. Indications of oil have also been noticed, but none of the explorations for this mineral have proved productive.

The numerous passes through the higher ranges were at first the routes of game trails that led from valley to valley. Following the game, came the Indians, and still later, looking for easy routes of travel, came the hunter and trapper. Then followed the government engineers, exploring and mapping, and finally the tourist and lovers of Nature. Most of these passes are closed for many months of the year; some of them are available for travel only with the use of the ax to give footing on the hard ice of glaciers that lie close to the divide; but one or two may be at length available for wagon roads, by which persons unfitted for the strenuous efforts now necessary to reach the higher country may have an opportunity to penetrate this region.—United States Geological Survey Bulletin.

The Important Eucalyptus Tree

To supply California, the southern half of which has been badly denuded of its original forestation, with an abundance of timber; to aid in the increase of rainfall over a dry area which is destined in the near future to be called on to support an immense population; to supply more than twelve million ties yearly to the railroads of the United States, and last, but not least, to furnish a perpetual bee pasture for hundreds of apiaries—these, all these, are the things which are beginning to be written in the history of one tree in southern California.

That tree is the eucalyptus, of many species, and the lumber from which has but lately been discovered to possess qualifications for use in certain industries possessed by no other tree, wild or domestic, known to man.

As a mere beginning of this plan the Santa Fe Railway company has bought ten thousand acres of land in San Diego County, California, and is planting it as fast as possible to young eucalyptus trees six or eight inches tall. Several hundred acres of this vast tract have been set out already, and fully ninety-five per cent of the trees have taken hold in good shape and shown signs of growth.

One of the most interesting things about the eucalyptus is its varieties, of which there are at least one hundred and fifty good species, with probably a third as many subspecies not commonly listed in the catalogues.

They grow to be of great size; in Australia individuals of some varieties have been known to attain a height of three hundred feet. In California, where trees were planted about some of the old haciendas forty years ago, they are still growing and their ultimate size is entirely problematical.

At eighteen years of age a tree will cut into at least two railroad ties. A blue gum six or eight years old, if cut to the ground, will send up shoots that will be one hundred feet tall in another eight years.—Technical World.

Peony One Hundred Years Old

Mrs. A. S. PARKER of Rivermead Farm, Auburn, has a peony in her flower bed which is over one hundred years old. The plant was set out in Durham when that town was first settled by her grandmother, Mrs. Mary Fickett. Fifty years ago it was divided and part of it brought to Auburn and set out at Mrs. Parker's home. It is now very thrifty and has recently had fourteen beautiful dark red blossoms on it, some of them as large as a plate.—Kennebec Journal.

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—Donahey in the Cleveland Plain Dealer

Says Bill to Bill: "What's the use of holding these conventions, anyway?"

The Rival Doctors

By Wilmot Kaye

A NARROW lane took its winding course up a typical Cornish hill, but the doctor's horse did not slacken its pace, for it was used to a hilly country. When nearing the top a motor car blocked the way. The doctor being in a hurry, and irritable, looked with no friendly eye at the woman who was busily engaged in repairing a punctured tire.

"Will you kindly allow me to pass?" he asked grimly.

"Just one moment, please," she replied. At last her task was over, and the doctor was frowning with impatience. A turn of the handle—the engine throbbed—and away went the car at a rapid pace with Miss May Sinclair, M.D.

Dr. Thomas Rayner shared with the majority of his brethren the prejudice which exists against their professional sisters who think that they are capable of curing the sick and maimed. This prejudice was increased by the fact that he was no lover of the sex. As a matter of fact, woman had been left out of his scheme of education. At the hospital it had been all work and no play, partly from inclination and partly from lack of means.

After he was qualified, a brilliant hospital career followed, which lasted until Nature thought that it was about time to take her revenge for work with no relaxation. The result was that a wreck of a man, with half the letters of the alphabet to his name, bought a practise on the north coast of Cornwall.

He had settled down to the humdrum country life when he received his first shock, for he found a visiting card on his hall table: "Dr. May Sinclair, Ivy Cottage."

The next time he passed he saw a brass plate on the door of the cottage, and a day or two afterward he noticed a small motor car outside the gate.

He fully believed that she was incompetent—until experience taught him otherwise. One morning he was riding carelessly to see a patient, when something frightened his horse, causing him to rear suddenly. The doctor lost his seat, and was thrown heavily. When he recovered consciousness it was to hear the throb of the hated motor car.

"That's better, my man," she was saying encouragingly.

In a few moments he found himself in her car, and being driven to her surgery. There being no other doctor within miles, he was forced to become his rival's patient, and she did her work as skilfully as he could have done it himself.

But what amazed him most was that her medical training did not seem to have unsexed her or to have banished her feminine charm. She dressed, too, as an ordinary woman of the world, and not as a freak, as is the habit of so many medical women.

When he got about again, he was forced to admit that she had taken no advantage of his being laid up. In fact, in one or two instances she had refused to visit patients who had pressed her to do so, even after he was again back at work.

But luck seemed to be against him, for in a few weeks' time he was back in bed again—this time with a low fever.

"Is there anything on your mind?" she asked, when he had been in bed for a month, and there were no signs of improvement. Her manner was not quite so abrupt as she asked the question.

"No," he replied brusquely.

On her next visit he seemed more cheerful, and Doctor May felt encouraged. She stayed for a while, but his manner did not unfreeze. At last she summoned up her courage and handed him a check for fifteen pounds.

"Fees which I have collected from your patients and on your account," she said.

"What do you mean?" he asked in amazement. "I can't take it."

"Is it not professional etiquette for—

"Rot!" he burst in.

"We will not mention the matter again," he began firmly, "and you will take the check or—or—"

"Or what?"

She raised his head and smoothed the pillow. How cool was the touch of her hand, and his heart throbbed sharply. A tinge of color came to his cheeks, and their eyes met only for an instant. Then she was gone.

To-morrow suddenly seemed a long way off. But as the sun was setting her voice sounded on the staircase, and he wondered at his agitation.

"Not to see a patient this time," she said, "but merely a neighborly call."

She wore a gown of filmy lace. It

was the first time that he had seen her in anything but a workmanlike "tailor made," and with the dress his hated rival seemed to have disappeared. She made herself comfortable in an armchair, and turned to him brightly.

"Why did you 'chuck' London?" she asked abruptly.

"Health," he answered shortly.

"A pity. You are lost here. You ought to be in Harley Street."

"There are worse places than this—for the unambitious."

"But have you no ambition?"

"Not now—only regrets."

"Tell me," she said softly.

Involuntarily her hand stroked his, as if she were soothing a fretful child.

"You wouldn't understand."

"Try me."

"You are literally the first woman that I have ever known—not that I know you," he added hurriedly.

As if hypnotized by her soothing hand, he began to tell the story of his life. With parted lips she followed his words, that seemed like the unburdening of a long-pent-up soul, and her heart throbbed with pity. She knew the strength and resilience of the man. She asked herself why he was telling her this.

"Do you understand—now—my regrets?" he asked.

Her face was turned away from him. She rose and silently left the room.

He looked forward anxiously to her visit in the morning, but it was the doctor that appeared. His friend of last night seemed to have disappeared with the change of raiment.

"I have sent a wire to Townley," she remarked. "I am not at all satisfied with you. I suppose he will not object to meet me in consultation?" she asked.

"You should not have done that. I have confidence—in—in you."

"Thank you," she answered sweetly, "but I thought you did not believe in women doctors."

"I am learning," he replied simply. "I've a lot to learn—of women."

"You have. And I will teach you," she said, but to herself.

Doctor Townley was pleased to approve of the treatment.

"He wants an interest in life, Miss Sinclair."

"He shall have it—if it be possible," she answered brightly.

That night the doctor did not visit the patient. It was the neighbor who came.

It would appear that Doctor Rayner was gaining an interest in life, for he had commenced a new study—a fascinating subject—and from that night he began to gather strength. In a week he was strong enough to take a trip in the hated motor car, and to wait outside while Doctor May visited the patients. She forbade him to work, and he did not struggle against her orders.

In fact, she at last succeeded in getting him away to Torquay, where he was to stay for at least a month, so that he could be quite strong when he commenced work again; but he was not happy there after a few days, for the object of his study was out of reach. The time passed drearily, and ere a fortnight of the month had passed, he was back again at his own home, and he had not asked his doctor's permission.

In the distance he heard the sound of her car, as it stopped at her cottage. He allowed an hour to pass and then went around.

She was seated in the garden.

"You!" she cried in amazement.

"I couldn't keep away," he replied.

"Oh!" was all she could say. Her cool, professional manner had disappeared, and she seemed strangely disturbed.

"Yes," he said shyly.

There was an embarrassing pause.

"How is the practise?" he asked.

"I am looking after your patients. They will be so glad to have you back."

"That's a fib," he remarked dryly. "You must take me into partnership. It is my only chance."

He rose and leaned over her.

"You have taught me all in life that is worth the knowing—"

He took her hand in his.

"Love," he whispered softly. "Have you any for your pupil?"

"Tom—you're a dear—but don't you know that love can only be taught by—"

Her head was now resting where lovers' heads are wont to rest.

"By—love."

A consciousness of perfect understanding made the rapture of their kiss more perfect.

And their lips met, in spite of the medical condemnation of osculation.

Dolly and the Explosion

By George Hyde Preston

"Dick Merrick! Who is he? How dare he make such a charge against you! You who would no more stoop to such a thing than would—my father!" And Dolly stood glowing at Lawrence.

"Dolly," said Lawrence huskily, "I am afraid the story is not mine."

"Lawrence," she cried, "I don't believe you!"

"Sit down and listen to me, Dolly," said he. "I did not steal the story—"

"I knew it," cried Dolly.

"But I can never prove it."

"Why?"

"Because I believe that I unconsciously wrote it from memory. It was all done at one sitting. The scene, the plot, the very words came to me so readily. It seemed queer to me then, but I thought it was because I was gaining facility, and all the time I was only remembering."

Yes, I know it is so now. I can see that other story plain before my eyes. But where it is—or whose it is I don't know."

Dolly stood up straight and tall and bravely smiling.

"Lawrence, we will go to them—now—and tell them this, and they will see—"

"They would not believe it."

"They will. They must! It is the truth! I will tell them that I know it is so!"

"Oh, Dolly! Bless you for your faith in me, but it is no use. I would not believe such a tale myself, nor will they."

"There is, there must be, some way to convince them," said Dolly. "Oh, Lawrence, we must convince them."

Almost unconsciously she took up the magazine, as if seeking a solution there. She looked listlessly at the story, and then suddenly became intent upon it. Then she looked at Lawrence with a joyous laugh.

"You dear, absent-minded old goose!" she cried, and ran to her writing desk, and stood before it, blushing hotly.

"What do you mean, Dolly?" asked Lawrence.

"I mean," answered she, unlocking the desk and taking a scrap book from a drawer, "that what they say is all true. You did steal the story!"

"Dolly!" cried Lawrence.

"You did! You stole it—from yourself! See!" pointing to the open scrap book.

"An Item of Interest," by Ansel—the name you used to write under."

Lawrence seized the scrap book. "An old story I wrote years ago for your father's paper! Dolly, you've saved me," he cried, seizing both her hands.

Dolly looked down, but left her hands where they were.

"Dolly, you're trembling," said Lawrence.

"Yes," answered Dolly, "I've—you've been in a—steamboat explosion!"

"Dolly, I remember it all now. That's the story you cried about."

"Yes," said Dolly.

"And you have kept it all this time!"

"Yes," said Dolly.

"And it has come out all right."

"Yes," said Dolly.

"And the other story—our story, Dolly—is that coming out all right?"

"Yes," said Dolly softly.

The Smack in School

A district school, not far away, Mid Berkshire hills, one winter's day, Was humming with its wonted noise Of threescore mingled girls and boys; Some few upon their tasks intent, But more on furtive mischief bent, The while the master's downward look Was fastened on a copy book; When suddenly, behind his back, Rose sharp and clear a rousing smack! As 'twere a battery of bliss Let off in one tremendous kiss! "What's that?" the startled master cries; "That, thir," a little imp replies, "With Will William Willith, if you please— I thaw him with Thuthanna Peathie!" With frown to make a statue thrill, The master thundered, "Hither, Will! Like wretch o'er taken in his track, With stolen chattels on his back, Will hung his head in fear and shame, And to the awful presence came— A great, green, bashful simpleton, The butt of all good-natured fun, With smile suppressed, and birch upraised, The threatener faltered, "I'm amazed That you, my biggest pupil, should Be guilty of an act so rude! Before the whole set school to boot— What evil genius put you to it?" "Twas she herself, sir," sobbed the lad; "I did not mean to be so bad; But when Susannah shook her curls, And whispered I was 'fraid of girls, And dursn't kiss a baby's doll, I couldn't stand it, sir, at all, But up and kissed her on the spot! I know—boo-hoo—I ought to not, But somehow, from her looks—boo-hoo—I thought she kind o' wished me to!" —William Pitt Palmer.

Sunday Reading

Our Business in the World

ONE of the first questions we ask when we confront a new and strange piece of machinery is, "What is it for?" It is a child's constant question. The soundest common sense is in it, the surest proof of a sound natural philosophy. We believe without being told that there is a purpose back of everything. Nothing happens. Even accidents betray a purpose to prove the value of the laws that have been broken. It is a fateful moment when the habit of asking "why" has brought the question to us about ourself—What am I for? One thing is clear on general principles—all things ideally, and therefore intentionally, are for the best possible uses. A knife is not meant to be a baby's plaything, nor a watch to prop up the leg of an uneven table. Perhaps in some swift emergency a lower than the highest use can be made of something, but not for long, without doing violence to reason.

Tell me that my business in life is to eat and drink and be merry, and I admit at once that it is true at times, but not all the time. Nothing can so perfectly eat, drink and be merry as a kitten, but to say that that exhausts the possibilities of a man, or even of a little child, is to say what we do not believe. Hundreds of things are included in my life. They have their place, and a claim not to be denied, but when I am told that they are what I am for, I know better. They are to be subjected, to be put under me. They are subsidiary and must subserve the supreme interest of my life. And what is that? To find pleasure and to avoid pain? That cannot be, unless life is to be called a failure, for every life misses some pleasures and meets some pain.

If success in life means all sunshine, then failure is the lot of everybody. But there is something higher than pleasure and pain, than sunshine and storm, to which these are only incidental, and that is doing God's will. That is supreme. That touches everything in life and makes the best of it, and in making the best of things makes the best of us. That is what we are for, to glorify God.

"Lo, I come to do thy will, O my God," is an utterance of the soul that gives life at once the highest unity and consistency, power and joy, peace and fruitfulness. The smallest task feels its dignity, the noblest calling becomes the more ennobled. It is like work on a splendid building. Digging and carting, cutting and trimming, stone and mortar and scaffolding, all belong to a great purpose and push its fulfilment.

The will of God! To do my share of it—where I live, with my tools, with my opportunities, with my enlargement or limitations—that is what I am for. It is a life of self-surrender, as I look up—of constant trust in my Father's love, of the growing intimacy of a devoted child, of the longing to know him better and please him more perfectly. It is a life of self-mastery, as I look in—of steady determination to keep my senses under the rule of my spirit, to bring every thought even into captivity to the obedience of Jesus Christ; and a life of self-development in the training of every power. It is the enlarging and enriching of every faculty, the enlightening and ennobling of tastes and sympathies. It is a life of self-devotion, of putting my best self at the point of need, striving in all sacred and sacrificial uses of life to bless the world, to uplift and redeem, and fill up in my body that which is lacking of the afflictions of Christ.

Let a man try to live with no sky, no God in his thoughts, no aspiration, nor adoration, nor awe of soul; let him throw the reins on the back of his body, and let the senses do as they please; let him live for himself alone and stay unmoved in bed with his children when his neighbor lacks bread, or warm in his purple and luxuriating at his feast when Lazarus lies cold and hungry at his gate, and is there any one who will doubt, long before the ends of things, that that is not what a man is for?

To do the will of God—that is the chief end and glory of man. No other aim can stand the test of time, to say nothing of eternity. No other aim can bring every note in the gamut of our being into play and make a genuine psalm of life. No other can take every fragment of our being, every word and deed, every thought and longing, every task and trial, every test and sorrow, and fit it into a mosaic whose pattern is the one shown on the mount, whose clear image is the predestined likeness of Jesus Christ.—Maltbie D. Babcock.

Thoughts to Brighten Life

WHO shall despair while the fields of the earth are sown with flowers and the fields of heaven blossom with stars?—Hamilton W. Mabie.

Some people are always finding fault with Nature for putting thorns on roses; I always thank her for putting roses on thorns.—Alphonse Karr.

Make the best of everything. Think the best of everybody. Hope the best for yourself. Reflect upon your present blessings, of which every man has many—not upon your past misfortunes, of which all men have some.—Charles Dickens.

Finish every day and be done with it. You have done what you could. Some blunders and absurdities no doubt crept in; forget them as soon as you can. One has but little right to complain who possesses so much as one corner in the world where he may be happy or miserable, as best suits him.—Nathaniel Hawthorne.

The men whom I have seen succeed best in life have always been cheerful and hopeful men, who went about their business with a smile on their faces, and took the changes and chances of this mortal life like men, facing rough and smooth alike as it came, and so found the truth of the old proverb that "Good times and bad times and all time pass on."—Charles Kingsley.

"Judge Not, That Ye Be Not Judged"

WHY beholdest thou the mote that is in thy brother's eye; but perceivest not the beam that is in thine own eye.—Luke vi, 41.

Judge not; the workings of his brain
And of his heart thou canst not see;
What looks to thy dim eyes a stain,
In God's pure light may only be
A scar, brought from some well-worn
field
Where thou wouldst only faint and yield.

—Adelaide A. Proctor.

When you behold an aspect for whose constant gloom and frown you cannot account, whose varying cloud exasperates you by its apparent causelessness, be sure that there is a canker somewhere, and a canker not the less deeply corroding because concealed.—Charlotte Brontë.

While we are coldly discussing a man's career, sneering at his mistakes, blaming his rashness and labeling his opinions "Evangelical and narrow" or "Latitudinarian and Pantheistic" or "Anglican and supercilious," that man in his solitude is perhaps shedding hot tears because his sacrifice is a hard one, because strength and patience are failing him to speak the difficult word and do the difficult thing.—George Eliot.

Sincerity Counts

AT a banquet many years ago, where that great actor and splendid man, Joseph Jefferson, was the guest of honor, the toast master announced that Mr. Jefferson would make a speech if the audience would give him a few subjects; and then asked us to send questions for him to answer. One of the questions was, "How can you play Rip Van Winkle so many thousands of times, and always seem to be in the spirit of it? How do you keep the constant repetition from becoming stale and humdrum?"

When Mr. Jefferson came to that question, he read it with a kindly smile, and said, "I do not seem to be in the spirit of the play; I always am in the spirit of the play. Let me tell you how and why. Every time I come onto the stage I am saying to myself that there are a few old people present who will never see Rip Van Winkle again, and there are a few young people who have never seen it before; and I play to them, with the sincere purpose to make them entirely happy."

The same work that is done over and over is never stale or humdrum if there be a sincere purpose in it, with each repetition, to make somebody entirely happy.

Rest

Rest is not quitting
The busy career.

Rest is the fitting
Of self to its sphere.

'Tis loving and serving
The highest and best;
'Tis onwards unswerving
That is true rest.

J. S. Dwight.

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Farm Notes

Will You Take the Hint?

A FEW days ago I called on a neighbor and found him hoeing in his garden. He said he was hoeing, but it looked to me more like hacking and hammering. His hoe was thickly coated with rust and the cutting edge was quite as thick as the back. I said he had a mighty poor tool and was doing very poor work with it. He replied in a sort of "don't care a snap" way that it was a weapon he rarely used, as it was not in his line. His wife generally did the gardening, and he paid no attention to the tools she used. Just then she came out of the house. Calling to me, she asked how I liked the appearance of the implement he had furnished her to garden with. She said he bought it at a sale, getting it with a lot of other junk for ten cents. "Ain't he a bird?" she exclaimed. "If I were to give him a tool like that to eat his dinner with he would howl like a wilderness!" He said he had been doing some thinking while he had been wielding that chopper, and he had about come to the conclusion that it was hardly fair to compel his better half to agitate the soil with such an implement, and the next time he went to town he would get her a bright, shiny hoe that would dazzle her eyes. I suggested that he take it to the blacksmith and have him draw the edge out thin, then touch it up with a fine file. I told him I kept my hoe as carefully as a razor, and as nearly sharp as I could, and it was a pleasure to use it, both in upturning the soil and in cutting white clover for my chickens. As I passed the house yesterday I saw his good wife using a new hoe, and she was as proud of it as a girl is of a new hat. I also noticed that the garden had taken on quite a polished appearance. Maybe some other FARM AND FIRESIDE readers will take a hint from this.

And that reminds me. Not long ago I saw a farmer buy a spade. He sat down outside the store, and a friend picked up the spade. After a short examination he remarked that it had a very thick edge. The purchaser said he had noticed that, and he guessed it would take about an hour's hard work to file it sharp. I asked him why he did not take it to the blacksmith and have him draw it out. He could do it in a few minutes, and then it could easily be kept sharp by touching up with a file occasionally. None of the group had ever thought of that. He took it down to the smith, and about fifteen minutes later returned with it drawn to a thin, sharp edge. The group of farmers thought it was the neatest little trick they had noted in a long time, and I'll warrant none of them buys a tool of that sort without having the blacksmith draw it out for him and put on an edge that can easily be kept sharp.

F. G.

"My Dog" and "Your Dog"

I SEE Secretary Coburn of Kansas is after the dog. He says every dog in Kansas or elsewhere—except, of course, "my dog Bob and your dog Togo"—are dirty, flea-breeding, microbe-scattering, ravening wild beasts. In the daytime they lie in the shade in summer, and by the stove in winter, and at night they wander over the country seeking sheep to devour. And the distracted sheepman gathers up his dead sheep and lambs in the morning and vows vengeance. But he does not know whence the beasts came, so his wrath comes to naught, and eventually he sells the few sheep he has left and turns again to grain growing and pig feeding.

Every man thinks his dog is all right and the sheep killer belongs to somebody else. Hence, if the sheepman accuses him of harboring a ravening beast, he puts on his war paint instanter and becomes a warrior brave, ready to perish in defense of his cur. Every dog, if we can believe its owner, is a remarkable animal, the most sagacious of his tribe, and does things that are wonderful. For instance, if he is given a piece of tough meat when he is not hungry he will hie him away to the field and bury it in the ground, and leave it there until it gets ripe and tender. The Sunday-school and other child papers are filled with wonderful tales of beautiful Jo's cunning capers, and every child wants a dog, and the tribe increases until a house without one to five dogs seems to lack defense, also offense. Meanwhile the price of woolens is kept up to a height that is prohibitive to a man with a family running far into numbers.

I was assessor in my district several terms, and never failed to list every dog,

great and small, patrician and plebeian, and the tax thereon was one dollar a head. Finally the owners of beautiful Jo, brave Tige, cunning Lotto and pretty Tootsy combined, without regard to party affiliations, and accomplished my downfall at the hustings. Since that time other assessors have arisen and kindly remembered every dog in the district, and have gone down to defeat by the same route I followed.

The gentleman who called around last spring informed me that he felt quite positive that he had not missed a single canine, because if a man failed to mention, or forgot, that he had a dog, he asked his enemy about it. And not a dog of any size escaped. The gentleman doesn't want the job any more, and he need have no fear that it will be thrust upon him by his dog-owning constituency.

Our dog tax goes into a fund which is used to reimburse sheep owners for sheep killed by dogs. It is a wise provision. It simply compels the owners of animals that kill sheep to pay for the sheep that are killed. A poor man with a large family of dogs assured me a few days ago that the statute was a disgrace to a civilized community. That a man should be compelled to pay a tax of a dollar on each of his "dawgs," all for the benefit of the men who keep a few "ornery" sheep, is simply outrageous, in his opinion.

One Kind of Justice

Not long ago a sheep owner in this locality heard the bells of his sheep jingling furiously about three o'clock in the morning. He called his hired man, saddled a horse and got out his gun. Combining the three, he told the man to follow the dog to Europe, if necessary, to get him. The dog jumped the fence and cut down the road. The man followed, and there was a hot foot race to town, two miles distant. The dog ran into the yard of a citizen, and into a beautiful kennel. The man followed, and finished it. The citizen brought suit for forty dollars, which he said was the value of the dog, and fifty dollars additional for having his slumbers rudely disturbed. The sheep owner proved that the animal had killed three sheep, and was busy with another when interrupted. The jury awarded the dog man forty dollars and costs. The sheep owner paid the money and said nothing. The hired man, however, was in an ugly mood, and he rid the locality of over forty dogs within a week. This action created a tremendous sensation, and though no proof could be produced that he had used poisons, he nevertheless found it convenient to leave the locality.

The Best Remedy

Secretary Coburn has done more for the encouragement of agriculture and animal industry in Kansas than any other man in that state, but he will find himself up against it if he undertakes to rid it of worthless, sheep-killing curs. His only hope lies in inducing the legislature to enact a law taxing dogs about five dollars a head. This will not by a long jump rid the state of dogs, but it will reduce their numbers appreciably. Make the fellows who desire to indulge in the luxury of a dog, an animal that is utterly worthless from any point of view and a constant menace to humanity, pay for the luxury. Then he might help some in ridding child literature of the maudlin stuff about beautiful Jos, pretty Fidos, cunning Petsys and other trash along that line, and instead, directing the child mind to animals and things that are useful, and make far cleaner and less dangerous pets. After seeing miserable little dogs receive more care than is usually bestowed upon infants, eat at the family table, and be tenderly tucked away in little silk-covered beds, then taken out for inorning airings, one cannot resist the feeling that some human beings are fearfully and wonderfully peculiar, and there are spots in our civilization that are remarkably rotten. Then when one reads of the ravengings of the poor victim of a rabid dog, and the intense sufferings that end only in death, all caused by an animal that is useless, worthless, unclean and treacherous, a disseminator of microbes of disease, a gatherer and breeder of fleas and other insect pests, an animal that is likely at any time to become rabid and destroy our loved ones by the most cruel death that can be inflicted, he feels like he cannot too quickly join the sheep raisers in their crusade against it, and to hope that Coburn and his helpers will succeed in ridding Kansas of the pest.

FRED GRUNDY.

Natural Questions About Roofing

Will it Wear?

A prepared roofing will certainly wear, providing it contains no organic fibres which are rapidly decomposed by atmospheric oxygen, such as straw, hemp, jute or burlap; providing the protecting saturant is free of volatile elements which heat rays will cause to evaporate; providing the saturating is done slowly so the innermost fibres are reached.

REX Flintkote is made of long-fibred wool felt, wool being by test a practically indestructible fibre. This felt is impregnated with a heavy gum which has been triply distilled, a costly process, but one

which is necessary to remove all volatile elements. The felt is slowly saturated in very long tanks, so every fibre receives its full share. Coal tar and asphalt, although cheaper than this triply distilled gum, are inferior, as they contain many volatile elements which soon evaporate, leaving a hard, brittle, porous, residue that is soluble in rain water, and of practically no value as a protection. Note the gaseous

smell of tar and asphalt, and taste rain water which has become tainted by them. These tests show the presence of volatile and soluble elements.

Is It Economical?

A prepared roofing that will wear indefinitely, like REX Flintkote, is certainly an economical roof, since the first cost of material and labor is much less than the cost of equally durable material, such as slate.

If, however, the roofing deteriorates rapidly, being made of inferior plant fibres and saturated with volatile oils, tar or asphalt, so that it can be sold at a low price, then

it is the most extravagant roof you can buy. The final cost of the roofing is doubled, the cost of laying is doubled and damage resulting from leaks is apt to be greater than the cost of both material and labor.

REX Flintkote is an economical roofing, because it costs less than slate and because it will outwear, without attention or care of any sort, every roofing material on the market selling for less money.

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Farm Management

By Prof. W. J. Spillman, United States Department of Agriculture

THE first question to be decided in connection with the management of a farm is what type of farming to follow. Shall it be dairying, hog raising, grain raising, fruit culture, truck farming, etc., or a combination of two or more of the many possible types? The answer to this question will depend on markets, the supply and character of available labor, the adaptability of soil and climate to the various crops, the adaptability of climatic and other conditions to stock raising, as well as on the personal predilections of the farmer. One would not think of truck farming on any considerable scale on a farm having no direct means of shipment to a good market. Dairying would not be a desirable type of farming where labor is scarce and unreliable in character. The raising of beef cattle is a precarious business in regions infested by the fever tick.

A very important factor in determining the type of farming, and one that is frequently overlooked, is the capital available for equipping the farm. Most farmers who begin their work on a new farm spend most of their lives in earning the equipment necessary to make any intensive system of farming pay. This equipment is acquired so gradually that few realize its cost. Unfortunately, few farmers keep any record of their expenses. If they did, many of them would be surprised to see how much their equipment has cost them. I have recently made rough estimates of the cost to the acre of the ordinary equipment found on several common types of farms. These estimates are only approximate, for we have very little definite data on the subject.

The Cost of Equipment Varies

The lowest cost of equipment on any type of farm in this country is found on the ordinary tenant cotton farm. One reason why cotton has such a strangle hold on poor farmers in the South is that a minimum equipment suffices for growing cotton. They have no capital with which to equip a farm of any higher type. On the average one-horse cotton farm in the South the total cost of permanent improvements, work stock, machinery, etc., is between eight and nine dollars an acre. This includes a cheap hut, no fences, a small mule, a plow, a single chain harness, no wagon, a few plow points of different pattern, and two or three hoes.

On an ordinary grain farm in the Middle West the equipment, including permanent improvements, amounts to about twenty dollars an acre. This means, too, that no money is wasted in unnecessary things. A farm properly equipped for hay production in the South, with no elaborate dwelling, and with everything as cheap as possible, costs the owner thirty-five dollars an acre, besides the price of the land. This low cost of equipment is possible only with the most careful management in building up a farm. It is therefore not surprising that twenty-dollar land in Alabama and Mississippi, when set to alfalfa, and equipped for handling this crop, sells at sixty to seventy-five dollars an acre. It is surprising, however, that when a well-equipped farm sells at these latter prices, the owners of practically unimproved lands near by want these prices for them.

A well-equipped hog farm stands its owner about seventy dollars an acre, in addition to the price of the land. A good dairy farm takes one hundred dollars an acre for its equipment, and the most intensive dairy farms in New England have had three hundred dollars an acre spent in fitting them to bring their present incomes.

I have dwelt at length on this point because it is one that needs enforcing. One of the worst faults of American

farmers is to spend my life earning the equipment necessary to make this farm pay a decent income. From its location, in a section where most of the farmers buy their hay, I should want to make a hay farm of it. To fit it for this would have required an initial outlay of fully forty thousand dollars, in addition to the equipment already on hand, and neither the owner nor I had the forty thousand dollars.

hundred acres of land before it began to pay a profit. He now has about two thirds of the equipment this farm ought to have for a maximum profit.

While the ordinary farmer has more land than he can equip, the city man who takes a fancy to farming—and thousands of them are doing so now—goes to the other extreme. He spends entirely too much on equipment. He builds a twenty-thousand-dollar mansion on a three-hundred-acre farm. He puts eight to ten thousand dollars more in fancy barns. His fences cost twice what they ought. He buys a lot of fancy stock, the produce of which he can't sell for any more than if they were the veriest scrubs. He buys machinery he doesn't need. In a few years he gets tired of a business that doesn't pay, and quits. The golden mean lies between these extremes. Up to a certain point the income should increase as the equipment increases, provided proper judgment is used in selecting the equipment.

Another important factor which should have an influence in determining the type of farming is the fertility of the land. A short time ago there was a lot of virgin soil on our Western prairies and on the Pacific coast. Experience has shown that these soils need little attention to their fertility for twenty to fifty years, according to the latitude and the nature of the soil. In cold climates the best soils will stand constant grain growing fifty years before they give out. Further south the best soils show wear in twenty years. In beginning farming on rich virgin soil it is perfectly logical to grow grain for sale if this type of farming is profitable. This is especially true in view of the small equipment necessary for grain farming.

But when the inevitable supply of weeds have taken the grain fields, and the land has been farmed so long that attention must be given to its fertility—and this is the case now in most parts of the United States—the type of farming adopted must be such as will maintain the fertility of the soil, unless the next generation of farmers shall be content with a heritage of poverty. The type ought to be such as to increase fertility. Very little study has been given to the relation of different types of farming to the maintenance of soil fertility. It is known, of course, that if a farmer follows a short rotation containing one or two legumes, and raises roughage only and buys grain to feed with it, his land will rapidly increase in fertility to a very high maximum. No one knows, however, just how fast such a system will build up any particular soil. We know, too, in a general way, that if legumes are much grown, and nothing is sold but live-stock products, the soil will rise to a high degree of fertility if it is naturally a good soil to begin with. There is reason to believe that by free use of green manures with commercial fertilizers the soil may be kept fertile. At any rate, the type of farming adopted must provide for maintaining fertility unless the soil is new and rich, and even then the type must either be conservative of fertility or soon change to one that is.

The Uncommon Type Often Desirable

In many parts of the country certain types of farming are neglected. It is frequently good policy to adopt a type



A Neat Cottage Occupied by the Manager of a Properly Equipped Cotton Plantation in Alabama. Ample, but Not Extravagant



The Kind That Makes Money for the Owner When Pastured on Clover and Fed Corn Once a Day, Late in the Afternoon. Two More Pigs to the Litter Would Be Desirable

Well-equipped farms seldom sell for what they are worth, while poorly equipped ones frequently bring more than they are worth.

A friend of mine who owns a fourteen-hundred-acre farm practically without equipment, and who doesn't believe that farming is a good business, recently offered, in a bantering way, to let me have charge of his farm and give me four fifths of the net profits. I did not accept the offer, because I did not care

farming is the tendency to put all available capital into land, and then for the owner to spend his life getting this land in shape to return a satisfactory income. Most large land owners in this country are land poor; that is, they own more land than they can afford to equip for good farming, and in consequence the land pays no profit. I know a good farmer—that is, a man of ability who knows how to manage a farm—who spent one hundred thousand dollars on eight

of farming not common in the vicinity. For instance, in many parts of the cotton belt even the farmers buy their hay—usually the poorest quality of timothy hay from the North. They pay enormous prices for this hay. There are few better opportunities in the whole country than in hay growing in the tobacco and cotton growing sections of the South. Fruit culture in New England is another neglected industry which would pay well.

Having determined on some type of farming, the next step is to decide on the details of the plan for the management of the farm. It is manifestly impossible to consider all the numerous types of farming in an article of this character, but in order to show the principles involved in working out a farm plan, let us make a cropping system for say a hog farm in middle latitude. This type is chosen because it rapidly builds up the soil, requires comparatively little labor, and returns a very fair income if intelligently managed. There are many different plans for managing hogs. In middle latitudes one of the best plans is to run pigs on wheat or other winter cereal from November 1st to May 10th, and on clover from May 10th to November 1st, feeding them all the corn they will eat, once a day, late in the afternoon. Handled in this way, ten bushels of corn will make a fall pig weigh about one hundred and seventy pounds by July 1st, and a spring pig run on clover until November, then penned and fed heavily

thirty to forty-five days, will consume about the same amount of corn and weigh a little more. Suppose there are one hundred acres of land available for field crops on the farm, the amount of feed needed is found as follows:

Daily Feed	4 Horses 1 Year
Hay, 15 pounds, 365 days.....	11 tons
Corn, 12 pounds, 365 days.....	312 bushels
Daily Feed	3 Cows 1 Year
Hay, 15 pounds, 180 days.....	4.05 tons
Stover, 10 pounds, 180 days.....	2.70 tons
Corn, 3 pounds, 365 days.....	58.5 bushels
Bran, 3 pounds, 365 days.....	1.62 tons
2 acres pasture, 6 months.....	6 acres
1 sow or boar.....	16 bushels corn 1/4 acre special pasture
12 pigs—6 fall and 6 spring pigs	
1 acre pasture the year round.....	120 bushels corn

Four horses will suffice for work stock on this farm. Two cows will supply milk and butter. If we calculate feed for three cows we shall have feed enough to feed two cows and one or two young cattle. Assuming that corn yields fifty bushels and hay one and one half tons to the acre, we find from the above feeding system the acreage of the various crops needed for

	Corn Acres	Hay Acres	Pasture Acres
4 horses	6.25	7.34	
3 cows	1.17	2.67	6.00
2 boars64	—	.50
19 sows.....	—	6.08	4.75
228 pigs.....	45.70	—	19.00
Total.....	59.84	10.01	30.25
Approximately.....	59.75	10.00	30.25

or a total of 24.57 acres. This subtracted from one hundred acres leaves 75.43 for the sows and pigs. Now one sow and her two litters of six pigs each need one hundred and thirty-six bushels of corn (2.72 acres) and 1.25 acres pasture, a total of approximately four acres. This divided into 75.43 acres gives about nineteen. This means that this farm will support nineteen sows and two hundred and twenty-eight pigs (half fall and half spring litters). We may now bring all these data together in the following table:

	Corn Acres	Hay Acres	Pasture Acres
4 horses.....	6.25	7.34	
3 cows.....	1.17	2.67	6.00
2 boars64	—	.50
19 sows.....	—	6.08	4.75
228 pigs.....	45.70	—	19.00
Total.....	59.84	10.01	30.25
Approximately.....	59.75	10.00	30.25

The nineteen acres of pig pasture should be one field in a rotation. This rotation may be as follows:

19 acres corn and cow peas.
19 acres corn and wheat and clover sown in July.
19 acres wheat and clover pasture.

This leaves forty-three acres for the remaining corn, hay and pastures. We need 21.75 acres more corn, ten acres of hay and 11.25 acres pasture. We can

get these approximately in the following rotation:

10.75 acres corn.

10.75 acres corn.

10.75 acres timothy and clover hay.

10.75 acres timothy and clover pasture.

But since timothy and clover cannot always be sown in corn safely, we may replace the second year's corn in this rotation by barley, and sow the timothy and clover about the first of September after the barley is harvested. The barley may either be fed, or exchanged for corn. The last field in this rotation may be divided by temporary fences into suitable pastures for the cows, boars and sows. This gives a good cropping system.

Many details of the management on such a farm cannot be given in a brief article of this character. Enough has been given, however, to show the principles involved in planning a cropping system. These details serve to show what a complex problem is presented when we undertake to plan a cropping system for a stock farm. It is not surprising that so many farmers adopt some fixed system of rotation that does not at all suit their needs, and do the best they can with it.

In the very creditable attempt to reduce the acreage of burley tobacco in the Kentucky blue-grass region, more potatoes will be grown, as this crop has proven more profitable than most others. *

Are Farmers Becoming More Wasteful?

A MAN said to me the other day, "I believe folks, and especially young people, are getting wasteful. They don't think so much about saving as they used to. They think it does not amount to anything, for instance, to sift the coal ashes in the morning. Throw the cinders and pieces of coal that have dropped down through the grate out with the ashes, and let them go! It is only a little thing." But I have been figuring on that. If you waste a pound of coal a day—and that is a low estimate—it means something like a hundred and fifty pounds in the course of a winter for each stove. If you are running two stoves you get twice that loss. It is a small thing, but it counts up! And coal is only one thing. The man or woman who is wasteful in one thing will be in another, and so there will be losses in most every part of the farm life."

I have been thinking of that, and I believe there is some truth in what this friend says. Take many of our young people, for example. Father and mother used to have pretty close times to get along. They saved every cent they got; they had to, to make ends meet. There was many times a mortgage to be paid off, or the new house was in the process of building. So they went without good clothes, and scrimped along the best way they could, until at last they were out of the woods and better days came.

And now the children have come on. What about them? They do not know much about these hard times. The farm is not the place where stern necessity knocks at the door every day. Noses sharpened at the grindstone of poverty are by no means as plenty on the farm as they used to be. Nice carriages, fine clothes, music and beautiful furniture in the home are the natural order of things. Is it any wonder that the young people are forgetting the true meaning of the word "saving?"

And then, father and mother make this a little worse for their boys and girls by saying, "Now, you and I know what it is to get along with little. We had pretty hard sledding when we started out. We can make it easier for our children. Let's do it. Let's save them the hard things."

In a sense that is grand. Who would criticize father and mother for trying to give their children the very best times they could? Is it wrong to want to shield these dear ones from the bitter things that poverty brings? But there surely is such a thing as carrying the matter too far—so far, in fact, that it may be a positive injury to the very young people we are so anxious to make happy.

The day will come when the boys and girls will go out into life for themselves. They will set up homes of their own. It is not an easy matter for a young man and woman, even in our day, to make this beginning. There must be to-day a lot of good, hard work and no slight amount of saving and planning and economizing to get the new home well under way.

But suppose the young man or woman has not been taught anything about the

way to save? Suppose they do not understand the value of little things. Can we not readily see that it will be a difficult, discouraging thing for the husband and wife to establish themselves in the new home?

There is nothing disgraceful about learning the lessons of economy that are to be found on every farm. It is more to be lamented when these have not been learned, for they will surely mean more or less of humiliation, and perhaps positive want, some time or other. It is my opinion that many who are to-day feeling the pinch of the present hard times have brought it upon themselves by their own easy way of living. While the sun was shining these good friends did not make hay as they might. They spent money as they went along, with an "easy come, easy go" profligacy, and now they are dragging their sleds over bare ground by the sweat of their brows.

So, would it not be wise if those of us who are fathers and mothers would help the young people to appreciate the value of saving the littles, that the big may come? Not in any small, mean way, but in a way that will work out to the best interest of the young folks we love so well.

And the best way to begin in this is to practise looking out for the little things ourselves. Ten cents saved and put away where it may be used when the hard times come is better than a dollar spent for something that does no one any good.

And there is this further thought about it: Waste is positively wicked. It is not right to throw away anything; everything has been given us to be used to the best advantage. E. L. VINCENT.

Items of Interest

Before you talk about the weeds in your neighbor's garden, be sure there are none in your own.

Some folks are twins to roosters. They can pretty well, but when it comes to work they let some one else do it.

Laziness is a weed that grows without cultivating; but thrift is a plant that requires good cultivation in order to do well.

M. L. P.

A small canning outfit seems to pay. One farmer in Tennessee canned some three acres of beans in July.

The happiest man in the world is the working man, for labor is one of the supreme laws of life.

Speaking about rough roads one farmer writes: "It is a fine thing that the berry crop does not last long, for the leaves have begun to wither, and if one did not know better he would think we were going to have an early fall; but they will soon green up and look natural. It beats me how they could sell the berries at all after having them shook up on these roads. Some people must have bought strawberry jam." W. J. B.

THE Pennsylvania man who asked for advice about going into Ohio to grow potatoes seems to have called out replies from a number of sources, and each man appears to think that his is the right spot for the inquirer to locate. Now,

as a matter of fact, it is not necessary for this man to leave Pennsylvania in order to grow potatoes. There are good potato growers in this state, and might be many more. I am convinced, however, that our part of the state does not have an ideal potato soil and climate. While I should not hesitate to grow potatoes on a large scale here, I believe that there are other parts of the country which have a decided advantage over us in this respect. I spent some weeks in the great potato-growing regions of Maine last fall and winter, and it was there that I had this fact most fully impressed on my mind. There the potato reigns supreme, and I became convinced that Maine has a soil and a climate which make it much more easy to succeed with this crop than it is for us to do so here. In fact, I am inclined to think that it is as easy for many of the Maine growers to get three hundred bushels an acre as it is for us to get two hundred. They have learned not to do things by halves there, however. They fertilize liberally and spray thoroughly, much oftener than we are apt to do. Five to seven sprayings are not uncommon. Then, too, the industry has developed to such an extent that the market facilities are of the best. Storehouses and buyers are located at almost every railway station, and the growers are able to get prices which are just as high as the general market conditions of the country will allow. In fact, the price which we can get is very largely determined by the conditions and prospects of their crop.

Fred Grundy gives some good, sensible advice to this inquirer in his reply in FARM AND FIRESIDE of June 10th. Maine is suffering from the effects of too much potato growing. The potato has dominated everything, and the soil is suffering in consequence. The best growers are finding that they must introduce other things and maintain a rotation on their soil if they are to keep their yields at a satisfactory point. It does not take long with continuous potato growing to exhaust the soil of its humus and injure its mechanical condition for the potato plant. Blight and rot are more troublesome and the general outcome soon becomes unsatisfactory.

I well remember one Maine man whom we passed on our way to a farmers' institute at a point remote from the railroad. They suffered from an early freeze there last fall, and many potatoes were frozen in the ground. This man was plowing up a field without digging them. The commissioner of agriculture left the wagon to examine some of the potatoes which were being turned out, and asked the man if he did not think it would pay to save them, as many were still unfrozen. He acknowledged that perhaps it would, but said that he was so busy

plowing for the next year's crop that he did not have time to save those he already had. This field had not been well sprayed, but the same man told of results on another field which proved well the value of spraying.

Potato growing is hard, heavy work and needs to be done on a scale large enough to warrant the purchase of all the modern machinery needed. The man who attempts to grow them without these appliances is working at a decided disadvantage in the race, and he cannot afford to own the appliances unless he is growing an acreage of considerable extent. One should also be located near to the shipping point. On our return from this same institute we met teams plodding homeward through the mud long after dark, which had gone with loads to the railway station, from five, ten and sometimes even more miles away. The crop is too heavy to haul such distances.

The hogs which Mr. Grundy recommends will afford a good market for the small and imperfect potatoes which cannot be sold, and will give a brighter aspect to the situation when blight and drought are unusually injurious.

FRED W. CARD.
Bradford County, Pennsylvania.

Alfalfa in the South

SOUTHERN farmers are awakening to the need of winter crops, and they are investigating all plants that may possibly prove valuable on the farms. The demand is essentially for a legume, and for this reason many crops are exploited. The vetches perhaps take rank at present over all others, but bur clover and alfalfa are rapidly coming to the front. It is quite certain that during the coming fall the alfalfa acreage in the South will be doubled.

There is great trouble in securing pure seed, but it will pay all farmers to get a good quality of seed, regardless of price. The best time to plant in the South is in October, about a month before frost is expected, and the young plants will get a start and be able to survive, while all other vegetation will either be killed or checked in growth. This will give the alfalfa a clear field, and during the winter it will put in good time getting strong roots, enabling it to withstand the summer sun of next season.

It is best to plant the crop in drills about eighteen inches apart, so that the weeds and grass can be worked out the first season with a weeder or other cultivating implement, and after that it will be plain sailing for alfalfa. Many Georgia farmers have been experimenting with the crop on a small scale for the past two or three years, and they are satisfied that it is one of the coming crops of the state. In Alabama equal progress has been made, and in many sections of the state farmers are enthusiastic over the prospects. There is little doubt but that over the entire cotton belt there are wide areas admirably adapted to the growth of alfalfa.

J. C. McAULIFFE.

Around the Farm

Items of Interest and Value to the Progressive Farmer

The Young Man and the Agricultural College

A YOUNG man living in Illinois writes that he has made up his mind to be a farmer because of the many advantages enjoyed by the people engaged in that vocation. With this object in view he has hired to a good farmer and is learning the business. Now he wants to know whether he shall continue to work out until he becomes proficient, or would it be better to attend an agricultural college a term as supplementary to the practical part of his education. He says he has questioned several practical farmers about this matter, and they appear to have little faith in the colleges, and rather advise him to stick to the farm for his education.

I know a great many practical farmers, and most of them very successful ones, who have little faith in agricultural colleges, and I confess I used to feel that way myself. But four years ago I met two young men who were attending an agricultural college, and as we had to wait about two hours for other parties, I put them through a course of questioning that brought out the real facts I wanted to learn. One of them was nineteen and the other twenty-one years of age. Both had been brought up on farms in different parts of the state, and both had been sent to the college by their fathers to learn the scientific part of farming. I told them plainly that I considered the college part of their training rather more ornamental than practical. Both promptly declared I was mistaken. The college part was as practical as the other; in fact, it systematized the other. On the farm they did things because other people did them, or because it was generally considered to be the best thing to do, but they had no scientific reason for doing them. At the college they had learned why certain methods were better than others. They had learned the results of doing things this way or that. They had learned what was taken from the soil by a crop, and how to most cheaply put it back. They had learned that they could, by growing certain crops, take out every bit of available potash, and while all the other elements might be there in abundance, the lack of potash alone would prevent the production of a profitable crop. To restore this soil to a fair state of fertility their fathers let it rest, or planted it with such crops (generally unprofitable ones) as experience had taught them could be grown on such land. They did not know what element was lacking, but simply considered the land "run down." The boys had learned how to ascertain what was lacking, and how to provide it. They said all they wanted was to know what had been grown on the land for some years back, and they could tell what element the soil was most deficient in.

Then they had learned how to feed stock to the best advantage; how to obtain the best returns for the feed; what young stock required to make healthy, strong and profitable growth; what was required in the feed to build up the animal or to lay on fat; what kind of an animal was most profitable for the feeder, and the why of all these things. They had learned a whole lot about the corn plant that their fathers never could have told them. They now knew that some of the practices on the farm were far from being the best. They said they had learned how to reason and trace effects to causes; in short, to use their brains to aid their hands on the farm and in the stock yard.

The boys were quite enthusiastic over what they had learned in the nearly two years they had attended the college, and they were anxious to get back to the farm to put some of their knowledge into practise. Both were real bright, practical young fellows, and certain to make first-class farmers. After that talk with them I changed my views concerning the benefits to be derived from a term at a good agricultural college. Afterward I had an opportunity to learn a great deal more about the workings of these institutions, and I became well satisfied that some of them are doing a great work in making the farmers of the future.

As a plain, matter-of-fact old farmer said to me, after we had looked about one of them for some time, "There is some exhibition play, and some toddy-roddy-bow-wow going on here, but most of it is rattling good, practical work, and it will make splendid, good farmers of the bright young fellows that are sent here or come of their own accord. But it is

plain that it won't do much good to send boys here that are easily led astray by the sigma-spi-beta societies in the literary and other fancy sections of this affair. If a fellow comes here with his mind firmly made up to be a farmer, and seeks to learn all there is to learn about that vocation, he is going to get some information that will be of immense value to him when he gets back to the land. You can't take a greenhorn and make a farmer of him here, but you can take a level-headed lad that knows a good deal about practical farming right in the soil and make a farmer of him who will be an honor to the profession. He already knows the practical side, and this gives him the scientific side, and by combining the two you have a farmer who will be a first-class success, one who will make money and leave the farm better than he found it."

I fully agreed with the old gentleman. If a young man goes with the intention of learning the practical business side of scientific farming, he will be benefited more than a little. He will learn things that he never could learn on the farm, and a good many things at that. The professors are well-informed men and can unravel many a puzzle for him that would remain unsolved if he obtained all of his education on the farm. I do not underrate the value of the education acquired right on the farm. It is invaluable to a young man who seeks to become a thorough farmer. But a term at an agricultural college gives it a finish to be obtained in no other way. It opens his eyes to the possibilities of the vocation and enables him to assist Nature in many ways the farm-educated boy would know very little about.

I well remember a young man going home after a two years' course at a good agricultural college, and with the assistance of his father buying a farm that the natives said would not support one rabbit to the acre. He secured the farm at a low price because it was supposed to be next to valueless. While at the college he had procured a hundred pounds of the soil to experiment with, and he had very soon discovered what was needed to make it productive, and also how most cheaply to supply that need. The following year he astonished the natives by growing a crop of corn on twenty acres of it that averaged a little over fifty bushels to the acre. The second year he had sixty acres in corn, and it yielded something over fifty bushels to the acre. People who laughed at him for buying a worthless old farm finally came to the conclusion that he knew what he was about. One old chap said, "I can tell you that fellow is a pretty sharp nut." We all thought he had dropped his wad when he put it in that place, but the fellow sure had learned a trick or two at that farm college he went to that was worth two of anybody else's. Them professors sure do know a few things about land and farming that's worth learning. The one who talked about soils at the farmers' institute gave me more pointers than I could work over in a year."

The young man has begun right to learn farming. When he thoroughly understands how farm work is done, then a term at a good agricultural college like the one in his state will show him how to do it in the most effective manner. The agricultural colleges do not make farmers. They finish them. The young farmer can learn at the agricultural college what he can learn nowhere else. If he understands the practical side of farming, the college will teach him the scientific side, and then he is equipped to make a winning fight for that competence which is the reward of the skilful tiller of the soil. I would advise the young man to continue to work on the farm about two years, then finish his education at the college. I am well aware that many experienced farmers who know little or nothing about agricultural colleges will say I am wrong, but I have closely investigated this matter, and am satisfied that my advice is right. FRED GRUNDY.

Sayings for Farmers

The highway of daily labor is the best road to success.

The man who likes to work generally finds something to do.

The warm grasp of a friendly hand is often worth more than gold.

A tree is better known by the taste of its fruit than by the looks of it.

M. L. PIPER.

Making a Permanent Pasture

Good pastures are essential to successful farm management, and I regret to say that a great many farmers do not have as good pastures as they should and could have. Every farmer needs a good pasture in which to let his stock run, and it is up to him to make a good one, and then keep it so.

To make a good pasture, much depends upon the preparation of the ground. I find that land should be prepared for grass the same as if for a market garden. It should be manured heavily, which can best be done with a spreader, plowed deep, and subsoiled if possible. It is well to let the air into the soil as deep as possible. The ground should be harrowed with a disk and spike-toothed harrow until it is in fine condition.

In sowing the seed I have found that better results are obtained by using half of it in going one way and the other half in seeding crosswise. If the seed is thus sown it will insure an even stand. Then with a weeder or a light harrow the seed ought to be covered lightly. Some firm the soil with a roller; this, however, may do for some soils, to insure germination, and be all wrong on heavy soils.

A plow will do the covering, smoothing and pressing all at one time and still leave a dust mulch to prevent evaporation. But there is so much difference in soils that the same treatment will not do for all. One must use his own judgment. The principal element, however, is to get a seed bed in fine condition—loose, so the air can get deep into the soil, yet sufficiently firm on top to make a sure germination of the seed.

I wish to mention a compound of grass seeds which I have used and which will make an excellent pasture: Redtop, four and one half quarts; white clover, two quarts; timothy, seven and one half quarts; orchard grass, five quarts; meadow fescue, five quarts; red clover, one and one half quarts, and Kentucky blue grass, sixteen quarts. If you know that any particular grass mentioned will not do well in your locality it would be well to drop it out and include more of one of the best growers. It also depends upon the condition of the soil. If one wishes to establish a pasture in a low, wet place it is best to sow more redtop than I have recommended.

In my experience I have found that the seeding succeeds best in late summer, after the small-grain crops are harvested, choosing such a time as to miss the scorching-hot days.

It is very necessary that no tramping of any kind be allowed upon the pasture for a year. It must be remembered that stock will quickly ruin a very large per cent of the delicate plants if allowed to tramp over the field. The aim should be for a perfect stand. The pasture should be built on a firm foundation, as it is to be a permanent part of the farm. It is worthy of careful preparation, constant fertility and good after care.

It is never best to allow stock to tramp over the pasture in winter when the sod will peel, in early spring when the frost is going out of the ground, or in spring before the grass acquires a feeding value.

It takes time to make a good pasture, and a firm sod cannot be grown in a year.

W. HANSON.

Johnson County, Illinois.

The Farmer's Duty in Practical Politics

I DID say that I would have nothing more to do with "practical politics," because I had found so much rottenness in them, but I have decided that my determination was wrong. It is the duty of every American citizen to help govern his country. The man who shirks this duty can enter no complaint if things go wrong and he becomes the prey of a thousand financial vultures. One should not allow himself to be carried away by the oratory of paid spellbinders, nor should he permit himself to be influenced by previous associations. He should quietly look the situation over, acquire all the information he can, sift it over, then vote for the man or party that is nearest his ideal.

There is some difference in the platforms of the two leading parties. In the main they are very much alike, but there are two planks in the platform of one of them that appeal strongly to the farmer. One of them is the demand that the banks shall put up a fund that will guarantee depositors against all loss if a bank should fail. At present every depositor

must trust to the honesty of the bank officials. If they speculate with his money and fail, his money is gone. It may be the sum he has laid up for his old age; the sum he has almost starved himself to save for his wife and children if he should be suddenly called; the sum he has labored and sweat for to buy for himself and family a home. What untold woe has been caused by the failure of banks! This guarantee fund can easily be provided, and it is only right that it should be.

The other plank is a demand that all kinds of wood and lumber be placed on the free list immediately. Every farmer in the land is interested in this. The party now in power had a fair chance to enact both these measures into laws last winter, as it had to give us several other good laws, yet it refused to enact any of them, though urged to do so by thousands of its most faithful supporters.

So far as the two leading candidates are concerned, there is little difference. Both are good, honest men, and whichever one is elected we are satisfied will do his utmost to make his administration a model one. Let us carefully study all these matters over, and vote for the party that will give us the best deal.

FRED GRUNDY.

Items of Interest to Farm Folk

A tract of cedar consisting of fifty-four acres was sold at public auction in Tennessee recently to the Eagle Pencil Company for \$9,964. This was said to be the finest tract of cedar in Tennessee. It was the largest cedar deal that has been made for years.

One reason for bad roads seems to be the fact that they are worked in the fall instead of spring. In some parts of the country the roads, which in winter are nothing but mud, dry up in spring and become so rough that travel over them is no pleasure whatever.

Perhaps few farmers' wives and daughters know that there is a market for their hair combings, which as a rule they throw into the fire. This hair is used for puffs, pompadours and fancy braid work. One woman saved her combings for a little while, and then sold them for thirty-five cents.

It is pleasing to note that post-office inspectors are going over rural routes in some states, making a thorough inspection of all the routes with a view of discontinuing them where the people take no interest in keeping up the roads, believing that the service is not appreciated on such routes. This is only too true. There are farmers on rural routes who take no interest whatever in the condition of the roads, nor do they seem to appreciate the rural mail service, for they write no more letters, nor do they receive more mail, than before. The officials think the rural free delivery is a great convenience to the farmer and that he should appreciate the service enough to drag the roads and keep them in good repair.

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Review of the Farm Press

What Others Are Saying About Important Farm Matters

Alsike Clover

INCREASING failure of medium red clover has brought the alsike clover into general notice. There is difference of opinion about the degree of its ability to thrive on sour land, but we do know that it usually makes a better showing under adverse conditions than the medium red. When the seed of the two clovers is mixed and sown, if one variety fails, it is sure not to be the alsike. This clover is sure to grow if any kind of clover can grow. It is very dependable. I believe, too, that while it will make a better stand on acid land than the red, liming helps it greatly. All clovers want a sweet soil.

Alsike when sown for hay usually is seeded with timothy or red clover. Larger yields of hay are secured by the mixing, and alsike tends to lie close to the ground when growing alone. It needs the grass or red clover to hold it up. It does not grow as large as the red, and yet this year at the Pennsylvania station I found one stalk that was four feet five inches long after being cut off by the mower, and throughout the field the alsike stood high amidst the timothy and red clover. On good land alsike becomes a large clover, yielding a big lot of hay.

Alsike is a heavy yielder of seed, which is produced in the first crop of the season, and not in the second crop, as is the case with red clover. I suppose this is due in part to its ability to be fertilized by aid of the honey bee. It is rated a little later than medium red in ripening—one week later, according to Professor Voorhees—but often the difference in time is hardly apparent. This season, when the alsike is more prominent in our meadows than the medium red, the time of blooming of each is the same.

Doctor Hunt, in his book on the "Forage and Fiber Crops in America," says that there are seven hundred thousand alsike seeds in a pound, or nearly double that of medium red. When mixing seed for sowing this difference in size should be kept in mind, and also the fact that the mixing should be by weight and not by volume, the alsike being much heavier. Where clover is wanted with timothy, and the red thrives fairly well, the addition of one pound of alsike to each four pounds of red is good practise.

Alsike is not valued quite as highly as medium red as a fertilizer, having a more spreading root system near the surface. I am sure, however, that many people overestimate the deep rooting of red clover and the results supposed to be obtained thereby. Red clover does have a heavy tap root that anchors it well, but the great part of the feeding roots of a red-clover plant are in the portion of the soil which the breaking plow can turn. The claim that clover does much of its good in feeding within the subsoil has been emphasized too greatly—it apparently is not greatly the superior of many ordinary plants in this respect.

Alsike is our best clover for permanent pastures. It lives several years, and when pastured off it makes new growth quickly. This clover is recommended for low, wet land, and I know from experience that it has no equal for such land, but it does finely on well-drained soils.

It is not the equal of red clover for hay or fertilizing purposes when the latter is at its best. There is no reason for substituting it when the red is a thrifty grower. But it is a pretty good substitute where a substitute is needed, and it is a money maker as a seed producer in these years of failure of red-clover seed.—Alva Agee in The National Stockman and Farmer.

The Wheat Jointworm

OVER several counties in southern Ohio the wheat jointworm (*isosoma tritici*) has proved a most serious enemy to wheat this season, and there is good reason for expecting that the infested districts will suffer in similar manner next year and that the areas affected will be greatly extended. The total loss for the state amounted to a large figure. In many fields it was impossible to find a straw that was not infested.

The jointworm has been known as a wheat pest for seventy years, and restricted localities have at times suffered severely for three or four successive years, but the present outbreak seems from present knowledge to be of greater extent than any previous one.

The adult insect is a small, four-winged fly, about one eighth of an inch long, belonging in the same order of insects as the wasps and ants. It appears in late

April, May or early June, according to the latitude or the backwardness or forwardness of the season, and lays its eggs in the straw, generally selecting the uppermost joints that have appeared at the date of egg laying. The young worms develop rapidly, each in a little cavity within the straw. Often knots, swellings and twistings occur in the straw at the point of infestation; again there is little sign of the insect's presence, except a slight discoloration or a little deviation of the fibers and grooves of the straw from their natural course. When the infested section is split with a knife it is found to be brittle and woody in character, and contains from three or four to twenty or more yellowish larvæ, about one eighth of an inch long when full grown. These larvæ remain in the straw until the following spring, when they issue as adults and commence again the life cycle in the new crop. The damage is done by the worms cutting off the sap supply from the head, causing it to become shortened, containing comparatively few kernels, and such kernels as develop are apt to be small and shriveled from lack of nourishment. Also because of the brittleness of the straw, high winds are apt to break much of it down.

The following measures of control are suggested: Sow as little wheat as possible in the infested districts next year. Cut infested grain low, so as to leave as few larvæ in the stubble as possible. Wherever practicable, burn over infested stubble this fall, or plow it under deeply. Scatter no green manure containing infested straw on or near fields that are to be used for wheat. Sow all wheat as far as possible from wheat fields of the preceding season. Sow quite early, from one to three weeks earlier than is customary in your neighborhood, so the grain will be well along toward heading out before the eggs are laid next May. Hessian fly need cause no fear at the present time, hence there is no reason for sowing late. The nearer the wheat is to heading when the eggs are laid, the better, since the heads will form and the kernels partially fill out before the sap currents are materially interfered with. For the same reason fertilize rather heavily, using a mixture rich in phosphorus to secure a strong straw. Work the seed bed into the best possible physical condition before seeding. Badly infested straw that is unused by the first of April should be burned. The broken bits of straw that run into the grain from the threshing machine should be separated out and burned. Districts that are only moderately infested the present year should observe the same precautions as the badly infested neighborhoods. Stubble fields that cannot be burned over in the fall may be harrowed over in the spring to break down the stubble, after which use a hay rake to collect them, then set on fire.—Ohio Station Press Bulletin No. 293.

Loafing Acres

Nearly every year there are a number of acres on the farm that are loafers, that do not contribute enough to the products of the farm to pay for taxes, let alone fencing. The first thing to do with these is to drain them.

Others are stony or gravelly portions which do not, and will not, produce sufficient crops to pay for cultivation; and the proper thing to do with these is to sow them to tame grasses, cover them over with barn-yard manure, and let them stay in grass. Sometimes a field has been farmed so long that it has ceased to be profitable, and the only thing to do with this is to put it down in tame grass and apply manure heavily.

There are frequently acres on the farm that are out of the way, that could better be planted to timber of some kind suitable to the neighborhood. Sometimes there are corners in a field cut off by a stream, or so inconveniently located that they cannot be farmed to advantage. The time has now come when we can put these in timber.

In some way or other every acre on the farm should be compelled to do its duty according to its ability. A loafer is wholly unprofitable and is very likely to get into mischief; and loafing acres are no exception. If they are not required to produce some useful crop they will produce weeds, and the seeds will be scattered by some means or other over the entire farm. Don't have any loafers about your house or your barns, and don't have any loafing acres on your farm.—Wattles' Farmer.

The Little Things

MANY a farmer has failed because he did not appreciate the importance of the "little things."

It is the small percentage by which one man surpasses the others that makes him succeed beyond the others. It is the little advantage he gains here, and the little advantage he gains there, which added together make his success overshadow that of his careless neighbors.

If one grain out of ten of your seed corn fails to grow, it is a little thing, but it means a loss of one tenth of your crop, and with no saving of expense or effort. If one hog out of a hundred dies when it might have been saved, it means several dollars less profit at the end of the year. If one chicken out of ten eats and does not lay, it means the profit of several other hens lost to keep the drone, and still with no less work. If one horse is sick a week because it does not have proper care after a cold drive in the storm, it means several hours of lost effort taking care of the animal, and several days of lost work on the part of the horse, with possibly a serious disarrangement of your working plans. If one lamb dies because it was born outdoors in the cold, it means several dollars less profit from the flock.

Now add these items together, and then multiply the total enough times to cover the possible losses which your actual daily farm life offers, and see what the losses are if you do not look after the little things.

There is an old saying among the tailors that "a stitch in time saves nine." On the farm "a little thing done at the right time makes several dollars." The little things on the farm are so big that a merchant prince, who figures his profits by the small fractions of hundredth parts, would gasp in dismay if he met them in his business.—The Farm Star.

Plant Food in the Soil

PLANT food can be restored to the soil in several ways:

(1) By manure. Manure contains a portion of the plant food which is fed to the animals. There is always some loss in its collection and preservation, and unless a quantity of feeding stuffs are purchased, manure alone cannot maintain the fertility of the soil. Manure is, however, of benefit to the soil by virtue of the organic matter which it contains, and it should be preserved and utilized as thoroughly as possible.

(2) By leguminous crops. Leguminous crops have the power of taking up nitrogen from the air, and fixing it so that it is of value to other plants. If, then, leguminous crops, such as cow peas, alfalfa, clover, peanuts, beans, etc., are grown, they secure a portion of their nitrogen from the air, and add to the fertility of the soil if plowed under. The roots and stubble also add to the fertility of the soil; but perhaps the most effective way of using leguminous crops is to feed them, save the manure carefully, and use it on the soil.

Every farmer should grow leguminous crops as extensively as possible, for his own use in feeding, or for sale, or for plowing under. The importance of these crops will become greater and greater as the nitrogen in the soil decreases. Nitrogen is the most expensive kind of fertilizer, and so far as possible it should be secured from the air, and not by purchase in feeding stuffs or fertilizers.

Leguminous crops do not add to the store of phosphoric acid or potash in the soil, and may indeed require these fertilizers to effect their best growth. However, the organic residues which they leave may aid in rendering inactive potash or phosphoric acid active.

(3) By fertilizers. Fertilizers may contain phosphoric acid, nitrogen and potash in active forms, and are used to supplement the active plant food of the soil.

Increasing Soil Fertility

Before attempting to increase the productiveness of the soil it is advisable to ascertain the cause of its low crop value, if possible, and then take the proper measures to overcome these causes.

Low productiveness may be due to a number of causes. It may be due to the climate or location of the soil. The soil may be too shallow, too porous, too wet, too dry; it may be acid in character or contain alkali; or it may be deficient in plant food. The general methods of increasing soil fertility are as follows:

Acid soils must be treated with lime,

to correct the acidity, unless crops which are not injured by acidity are to be grown (such as cranberries).

Organic matter, if present in small quantity, should be increased by the use of manure or by plowing under green crops. In the latter event it may be necessary to use a fertilizer containing phosphoric acid and potash to secure a good growth. The crop selected should be some leguminous crop, which will not only add organic matter to the soil, but will also take nitrogen from the air, and thus increase the store of this valuable plant food in the soil.

The organic matter improves the physical character of the soil and increases the activity of the agencies which change inactive plant food to active.

By proper use of green crops and manure many poor and unproductive soils have been increased greatly in fertility. The green crops are often planted when the crop is laid by; for example, cowpeas are often planted in this way between the rows of corn.

Active plant food should be increased, first, from the stores in the soil by the use of green crops and manures, and, second, by the use of commercial fertilizers. Except for truck crops, and other crops of high value an acre, the farmer should endeavor to secure all the nitrogen that he needs from the air, and he should purchase only phosphoric acid and potash in the form of commercial fertilizers.—Texas Station Bulletin No. 99.

Filling the Silo

THE advice of one who has had several years' experience, although that experience may be by proxy, will doubtless help some to avoid the mistakes that he has made. On most farms corn will be the crop grown for the silo. Whether it is planted in drills or checked in makes little difference. This will depend upon the condition of the ground. If moderately clean it may be drilled in; if not, it is preferable to check and plow both ways.

The corn should be run through a cutter before it is put into the silo. My experience shows that the length of the cut makes little difference. The most important thing is the condition in which the fodder is brought to the machine. The same good judgment should be used here as in harvesting the hay crop. The same principles govern. If frost will permit, the corn should be allowed to reach that point in its growth when there is the greatest amount of nutrient in the stalk and the ear. That is probably the time when the corn is just glazed and beginning to dent. Many people who are filling their silos for the first time make the same mistake we did. They think that the corn should be put in as green as possible. If it is cut in this greenest condition there will be a rankness to the silage and an excess of acid that will injure its feeding qualities.

If cut at the time indicated above, and allowed to cure slightly before it is put into the silo, this will be avoided. The time necessary for this curing process will depend upon the weather.

One day of bright sunshine will take out the excess greenness and the fodder will come to the cutter green but wilted. Such ensilage will come out of the silo in the winter sweet and good. Remember it cannot come out in good condition unless it is put in in good condition. When the corn is just right for cutting it will be past the rank, sappy stage and starting to mature.

After having cured in the bundle the fodder will have a green, velvety look. If you take up the bundle and thrust your face into it, you will want to let it remain there, it has such a sweet aroma. Pack the silage well, so as to exclude all air, and it will come out in the same sweet condition.

The cattle will eat all that you will give them; you will find that they never thrived so well before and never came through the winter in such good condition. You will also be convinced that you never before have provided such excellent feed so easily.—J. S. Stevens in Kimball's Dairy Farmer.

In the shady thicket robin hides away, Grasshopper and cricket drowsy concert play.

By the roadside linger little brown bare feet,

Little thumb and finger pull the berries sweet.

Butterflies are splendid, katydid is here, Summer's almost ended, autumn's drawing near.

—Farm Journal.

Gardening

By T. Greiner

Roots and Herbs

Ohio reader asks whether there is any bulletin published describing roots and herbs used in the drug trade and telling how to prepare them for sale. I think the Department of Agriculture in Washington once had a bulletin on this subject. Our friend should apply for a copy to the Secretary of Agriculture, Washington, D. C.

Cauliflower Plants

Cauliflower is one of our choicest vegetables. It usually brings a good price in market, often fifteen cents a head, and sometimes twenty. But it is not so easily raised, and never a sure crop. Many of the plants are liable to fail to head up well. This even in spite of all we can do, especially if the season is hot and dry. Yet we must have it. And people will plant it, and of course come and call for plants. Seed is high priced, too. For that reason the home grower hardly ever raises his own plants. Often the supply is scant. Every year for a number of years people have been inquiring in this vicinity for cauliflower plants, and often without being able to find them. Many persons would have been willing to pay fifty cents a hundred for the plants if they could have had them. These plants can be raised for half that figure at a profit. I shall take pains to have enough for all neighbors that might call for such plants next year.

Perpetual Peas

We like a full supply of green peas, and this for the longest possible period. We never seem to tire of them. Yet I do not like the perpetual or everbearing sorts. I don't like the kinds that have to be picked over a dozen times during the season. I like the varieties that we can pick over once or twice at most and have done with them. The Alaska is of this kind. So is the New Surprise, a pea much resembling the older Philadelphia First Early. So is the Dwarf Champion, and Thomas Laxton, etc. To provide for a continuation of the supply we depend on the later sorts, or on the early ones planted later. In fact, I plant peas whenever I have a row or two available in the garden, from earliest spring until mid-season. Sometimes the late plantings do very well, and we enjoy our green peas in August or September just as much as we do in June or July. But no more perpetuums for me! They encumber the ground too long when I want to plant second crops to occupy the same land, and give us something to gather later on, if nothing more than turnips, winter radish or a late crop of Alpha table beets.

Strange Bugs

F. H., a reader on Long Island, New York, writes to inquire "about a strange bug which has been found on our peas and cabbage in small heaps like sawdust. They are gray in color and might easily be mistaken for cigar ashes. What are they, and what is the remedy for them?"

At first this query puzzled me not a little. On second thought, however, it appears plain to me that these gray patches are nothing more nor less than common plant lice (aphides). They are often very troublesome on the crops mentioned. A long cold rain will sometimes wipe them out. Spraying with whale-oil soap, kerosene emulsion or tobacco tea may be recommended as a pretty effective remedy. A liberal dash of hot soapsuds on a cabbage plant or head is also pretty sure to clean it from these unwelcome visitors.

Special Plant Foods

A Pasadena, California, reader asks me "to print a list of what particular plant foods are best suited to the different kinds of vegetables." His idea is to hasten the growth of vegetables, such as radishes, lettuce, onions, etc. The soil around there is very variable. His own is quite sandy, and water goes through it as through a sieve. By means of heavy manuring he has changed the nature of his ground from a white desert to a black loam. Yet it is still too light. In particular, our friend wants to know whether nitrate of soda is good for all kinds of soil and all kinds of crops, flowering plants, such as violets and chrysanthemums included.

When our friend is able to change his white sandy soil into a black loam he is on the right track and on a sure road to success. About the quickest way in which this improvement can be accomplished is the way in which he proceeded—namely,

by the application of plenty of stable manure. I believe, however, that we here can in a somewhat slower, but surer and more complete, way accomplish the thorough renovation and improvement of light and leachy soils, and get them in shape to retain moisture, by growing a good clover sod and plowing the sward under, thereby filling the soil with vegetable matter and plant fiber.

The application of mineral fertilizers will, of course, help the growth of clover, and consequently will increase the amount of plant fiber in the soil after the sod has been plowed under again. In California you may be able to use alfalfa, or crimson clover, or cow peas, or some other legume.

All crops need the complete assortment of plant foods. Some use a little more potash than others, and some a little more phosphoric acid, etc. In some cases we can use nitrate of soda to good advantage for the purpose of encouraging vegetative growth. I usually, almost invariably, scatter a little of it over my beds of lettuce, radishes, onions, cabbages, cauliflower, etc., in early spring. It stimulates succulent growth of root and top, just what we want in these vegetables. I have occasionally seen remarkable effects of it on beets, spinach, etc. Yet I will not claim that we could not have a good garden without it. I also like to put a little muriate of potash on my potatoes, cabbages, cauliflower, celery, etc. It is probably best and most effective if applied to the soil before planting. Potash in this or other forms is also useful quite often on asparagus, strawberries, grapes and other small fruits. Superphosphate, or phosphatic manure generally, seems to be particularly serviceable, for the purpose of hastening seed production. It is well, therefore, to apply it for such crops as grains, corn, beans, peas, tomatoes, melon and other vines, etc.

I have here named only the general principles which we have to bear in mind. But again I wish to say that on good soil or with plenty of stable manure we can get along very well, and raise very fine vegetable and fruit crops, without spending a cent for chemical plant foods. Under some circumstances a very little nitrate of soda applied on violets or chrysanthemums will give good results, also. Usually, however, the application of small doses of bone meal to the soil in which such flowering plants are grown is recommended, and always perfectly safe.

Double Cropping

On the spot where we picked green peas in June we now have a luxuriant growth of Emerald Gem melon vines, and in all probability we will gather a large yield of these spicy little melons in August and September. On the spot where we now are cutting our early cabbages, cucumber vines are already started ready to occupy the space as soon as fully cleared from the cabbages, and we expect to pick pickles in September, and possibly long after our earlier cucumber vines have succumbed to age or disease.

On the same spot where we had our early lettuce, radishes, cresses, cabbage and celery plants we now have a stand of beans, turnips, celery, lettuce, carrots (the quick-growing Short Horn), radishes and other things. Why should we leave this good land lie unoccupied and unproductive half the season? Crops grow quickly in the hot weather of late summer and early fall.

Cabbage Maggot

An Indiana reader reports that he has had "bad luck" with his cabbages for several years. "It grows fine for a while; then suddenly some plants turn yellow and die, often after they have begun to head." He has not been able to find anything on them except now and then some ants. Most likely our friend has not looked for "the root of the trouble."

Undoubtedly the maggot is at the bottom of it. You will find the culprit or culprits on or in the stem underground, having tunneled into it and caused the roots to decay. The part above the ground then naturally wilts, turns yellow and ceases to grow. Remedies now come too late. But what you can do is to gather up all affected plants and destroy them by fire or otherwise taking particular pains to destroy with them every maggot that is on or in them, and thus prevent their propagation for another season.

Next spring, when you set plants again, use tarred-felt collars on them. That will keep the maggot off.

Fruit Growing

By Samuel B. Green

Plum Curculio on Apples

O. D., Lanesboro, Illinois—The apples which you enclose are injured with what is known as the plum curculio, which is very troublesome in many sections, causing the fruit to be knotty and rough. Some relief from its ravages is obtained by spraying the trees thoroughly with Bordeaux mixture in which has been put a little Paris green. This not only prevents the work of the curculio, but also to a great extent the work of the codling moth and of leaf-eating insects.

Where there is much rubbish in an orchard, the conditions are very favorable for the wintering of this pest. If the grass and dead trees about the orchard are burned in autumn, a large number of these pests are destroyed.

Siberian Crab as a Root Stock

C. H. B., Medford, Minnesota—*Pyrus baccata* is the wild crab of northern Europe and Asia. It is not much used in this country for grafting stock, but has within the last few years been extensively recommended by Professor Hanson, of South Dakota, as a desirable stock, on account of its great hardiness, which would prevent root killing.

My experience with it, however, leads me to believe that while it has wonderful hardiness, many of our best varieties fail to take well on it, and a better stock for this purpose is probably the seedlings of our hybrid crabs, which are practically the common crab apples of our fruit list, such as Transcendent, Virginia, Florence, etc. These are not true crab apples, but crosses between the large apple (*Pyrus malus*) and the small crab apple (*Pyrus baccata*).

Evergreen Seedlings

Damping Off

M. H., Christine, North Dakota—I take it that your evergreen seedlings are probably destroyed by what is known as "damping-off" fungus, which is very destructive in some seasons, and especially in the case of rather heavy soil. On a light sandy soil there is very little danger from loss of this kind where reasonable attention is paid to giving proper shade.

If the soil of your evergreen seed bed beats up into the seedlings and sticks there, leaving them covered with it, I think you may put it down that it is too heavy, and the surfacing of the bed with about one half inch of coarse sand would improve conditions very much. I would see to it, also, that not too much shade is used. The best conditions are those in which the plants have a play of light and shade over them during the whole day, and where about one half sunlight is kept off of them in bright weather.

One of the objections to brush shade is that it cannot be removed in cloudy weather. This year I am using more lath screens than brush shade, as I think I can control conditions better with them.

It is possible that your seedlings are destroyed by birds. We have sometimes had a good deal of loss from this cause just as they were pushing out of the ground, and have been forced to use a wire net in addition to the lath screen in some places.

Roses Changing Color

Mrs. W. R. McP., Highland, Ohio—You state that your crimson rambler rose, which for a number of years has borne normal red flowers in large clusters, this year has some pink, almost white, flowers that are very poor, and that these fall to pieces very quickly, and that almost the whole of your plant is covered with them, but that a portion of it still has the characteristic flowers of the crimson rambler.

I think this must have come from the rose being either budded or grafted, and that the sprouts which came up from below the graft were vigorous and strong, and that you allowed them to grow, and as a consequence they have nearly replaced the true crimson rambler.

I think the best way for you to remedy this trouble is to cut away at once all the portions of your bush that bear pink flowers. By doing this you will throw the whole strength of the plant into the normal crimson rambler flowers, and get a good, strong plant.

Your trouble is a very common one with amateurs who are growing grafted roses, and is especially liable to occur where the kinds that are grafted are weak-growing kinds. On account of this

mistake being so often made by amateurs in growing roses, I generally discourage the practise of beginners growing any roses except those on their own roots, although some varieties of roses are much more beautiful when grafted on some strong stock than when on their own roots, and are preferred by experienced growers.

The condition of the soil probably has nothing whatever to do with the change in color of the flowers.

Lemon and Orange Not Bearing

G. A. W., Johnstown, Pennsylvania—In orange and lemon groves many varieties fail to set in some locations, while in others they bear abundantly. Most oranges that are grown from seed will live many years in a dwelling or greenhouse and fail to set fruit or even to flower, and it is necessary to graft or bud them with some of the early bearing sorts in order to get good results. In your case both lemon and Otaheite orange flower, but the fruit does not come to maturity. I think this due to some unfavorable environment, such as too much water when in flower, or to a chill.

I think that as the Otaheite orange blooms over a long period, that your plant will set fruit if you give it good care this summer. It is a good plan to give insects free access to the flowers when the plants are in bloom, or else pollenate them by hand.

The Cornel Cherry

T. S., Mountain View, Hawaii—The Cornel cherry (*Coruns mascula*) is highly prized in Europe for hedges and arbors. It produces pretty flowers, which are followed by edible fruit. It has been widely tried in America, but is not satisfactory, on account, I think, of a sort of blight that frequently kills out large portions of it.

Thorns on Apples and Pears

W. K., New Durham, New Jersey—The twig with thorns about two inches long on it which you sent, with the statement that it grew on a small tree in an open field where apples and pears grow, is evidently a seedling from either of these kinds, and I am not sure which, as they often resemble one another when very young. If you will send on a specimen with perhaps a dozen good leaves and a twig of this season's growth I will identify it for you.

In growing apples and pears from seed it is not uncommon for these thorny specimens to occur, and they generally indicate a return to the wild state. Such plants generally bear inferior fruits. Our cultivated pears and apples are almost entirely free from thorns and never have the thin leaves of this thorny form. Horticulturists are so sure of this that in their breeding experiments they assume that plants with these wild characteristics will not bear fruit of any special value, and do not carry them on to fruition.

Willow for Windbreak

G. W. B., Hutchinson, Minnesota—I like the white willow and the Russian golden willow about equally well for a windbreak. If you decide to plant a double row of these trees, I think they should be about ten feet apart and the cuttings set about two feet apart in the rows. As to the distance which the trees should be placed from the property line, you would have a perfect right to put them close to the line, and your neighbor would have the right to cut off every portion of the tree that projects over his line; but if your neighbor does not care for these trees, it seems to me, as a matter of fairness, you should aim to keep them at least one rod away from the line.

The cuttings will do well if planted on spring-plowed land, provided the soil is firm. I do not like to put the cuttings in on a newly turned sod, but sometimes this can be done to advantage. There is, however, considerable risk in so doing, for if the season should prove to be a dry one, they would very rapidly suffer for lack of moisture.

Cuttings for this purpose should be made about twelve inches long and be set in a slanting direction, which is far better than planting them straight into the ground. It is better to cultivate than to mulch the cuttings for the first few years, after which they may be mulched successfully with stable litter, grass or almost any material of this kind that is ordinarily found on a farm.

Live Stock and Dairy

Useful Facts for the Stock Raiser and Dairyman

Utilizing Dairy By-Products

IN THESE days much of the profit, and in many cases the whole of the success, of a business depends upon utilizing the by-products to the most profitable advantage. If we will make a careful study of the business methods employed by the leading manufacturing establishments we will find that it is upon the economical use of their by-products that they have built up a profitable business. It is upon the more economical use of these valuable by-products that I desire to present a few thoughts to the dairymen.

According to a recent estimate made by our Secretary of Agriculture, the value of the dairy by-products of the country for one year would be considerably over fifty million dollars. This item we can readily see is of vast importance to our dairymen and is deserving of their most careful attention and study.

Skim Milk as Human Food

Of the various by-products, skim separated milk is by far the most important and is the most susceptible to varied and profitable uses. Skim milk as a human food is a question that has been studied in all its phases by our most scientific men, until at the present time the problem of preserving this liquid food in a solid form has been solved, and there are numerous factories which are manufacturing a product known as powdered milk.

There are four kinds of powdered milk. One product is made from cream, one from whole milk, one from half-skimmed milk and one from the skim milk. The product made from skim milk is by far the most important, and the trade in this product is rapidly increasing. By a secret process the manufacturers are able to remove the water from the milk, and the resulting product is a white powder, which when mixed with the desired amount of water makes a pure and wholesome article of diet. This powdered milk is used largely by bakers and confectioners, to whom a pure article of skim milk is a daily necessity. It may be stored in cans or barrels and used as needed, and the baker or confectioner is independent of the city milk dealer or delayed milk trains.

The use of this product is deserving of being encouraged, and it may be made a useful portion of the every-day diet of a large number of people. The United States navy ordered large quantities of this product while preparing for their trip around the Horn, and from the present indications a large foreign demand will be ready to be supplied as soon as the good food qualities of the new product have become established.

During the past few months I have written a number of articles in which I have emphasized the necessity of economy in production, but after a close study of the manufacture of dairy products among the leading manufacturers I have found that economy in manufacturing must receive fully as much attention as that of production. That the old-fashioned creameries and cheese factories can no longer compete with their new rivals, the powdered-milk plants and the condensaries, is no longer idle talk, but a commercial, an economic and an agricultural fact, for the reason that they cannot realize an increased profit by the intelligent use of their valuable by-products.

The question of how to dispose of this powdered milk without reducing the price of pure (whole) milk is to my mind the greatest dairy problem of the day. Earnest effort should be made to accomplish this object. We should have experts to study the conditions for the opening up of foreign trade, and practical demonstrations to show the various uses to which this product is adapted.

In baking bread this product adds to the weight and nutritive value of the loaf, and enough flour may be saved to nearly pay for the product used and yet make a loaf of equal weight and greater food value. Practical experiments show us that milk bread is richer in fatty matter and markedly superior in albuminoids, or flesh-forming constituents, due undoubtedly to the casein of the milk becoming mixed or incorporated with the fibrin of the flour. Bakers have long known the value of skim milk in bread making, yet the difficulty of obtaining a uniform product has been the cause of their not utilizing it; but with the coming of powdered milk this objection is removed, and now it is possible to keep the product in barrels in their own buildings, and at any time when needed all that is necessary is to add a little pure water and the white powder does the business. Used in this

way there is a great future possibility for the powdered milk business, and it is certain to become an important factor in determining the value of all dairy products in the near future. The condensary plants are also an important factor in utilizing the whole of the product to a more profitable advantage than the creamery and cheese-factory operators.

Skim Milk as Food for Animals

As a food for domestic animals skim milk occupies a conspicuous position among the various kinds of feedstuffs, especially as a food for young and growing animals. The facts which have been proven by various experiments are as follows:

Skim milk gives the best returns when fed to very young animals and when it constitutes the larger part of their ration.

It is next best for animals making rapid growth, but which need food other than milk, mainly of a carbonaceous nature.

No class of live stock will give greater returns for skim milk than poultry of various kinds.

At the New York Experiment Station chickens were grown successfully on a diet composed largely of skim milk, although they were allowed a run of the fields during the time they were being fed this ration.

It was estimated that in the test, after allowing from twenty-five to fifty cents a hundred for the skim milk and some other food in proportion, the cost of producing one pound of live weight was less than six cents up to the time that the birds weighed three pounds each. During the time this test was being made the milk was fed sweet, but it has been found equally as satisfactory when fed thick and loppered, and the waste is much less in that form. Many practical poultrymen believe that skim milk is worth from fifty cents to one dollar a hundred when fed to turkeys and poultry.

The most rapid gains in pig feeding are commonly made by dairy farmers who understand how to feed out dairy by-products in connection with grain foods. Professor Henry, of Wisconsin, who is without doubt the highest living authority on feeding domestic animals, says regarding the value of skim milk as a food for swine:

"Skim milk has a value as a food for stock that is higher than merely serving as a substitute for grain. All of the constituents of milk are digestible, and this valuable by-product of the dairy is rich in bone and blood building constituents."

Experiments have been made in which milk and other feeds were fed to pigs to ascertain the effect of those feeds upon the bone and muscle of the animals. It was found by actual tests that the bones were made stronger by feeding milk.

When we consider the use of this food for bone and blood building we must also remember its easy digestibility and that by adding a number of other foods to the ration it makes it more palatable and probably assists in their digestion. We must hold skim milk in a high place in the list of available feedstuffs on the farm.

Authorities seem to differ on the relative value of sweet and sour skim milk as a food for swine, but my experience convinces me that either is desirable, but that we must avoid sudden changes from sweet to sour, and vice versa, if we would not injure the digestive systems of our animals.

Calves appear to be next in favor as profitable consumers of skim milk, and some feeders appear to think that they can feed their skim milk to calves and derive more profit from it than by feeding it to swine. This depends to a large extent upon the good qualities of the animals that are being fed.

In feeding calves, one cent's worth of oil meal will take the place of a pound of butter fat that has been removed from the milk; besides, when the milk is fed warm from the separator it is better for the calves than milk that is cold and sour. A young animal that is fed on skim milk with meal feed and grains may be made to weigh almost as much at one year of age as one of similar breeding fed on whole milk with the same kinds of grain.

Calves for veal may be fed on whole milk for a while, then they may be gradually changed to skim milk and grain and fed for a while, and then fitted for market by feeding them whole milk for a week or ten days, to put on a smooth finish and improve their sale. In feeding skim milk to calves, overfeeding must be avoided, as they are easily made sick.

Various Uses of Milk By-Products

Cheese may be made from skim milk, and should be a very good way to dispose of large quantities of this by-product. A product called "Dutch" cheese or "pot" cheese is also made from skim milk, and finds a ready sale in many cities and villages. With this there seems to be no established price, although many claim to get as high as a dollar's worth of cheese from one hundred pounds of skim milk.

Buttermilk ranks next to skim milk in feeding value, and is also largely used in cooking and baking. Good buttermilk fresh from the churn is more valuable than whole milk, but the danger of its not keeping while being shipped causes the demand to be limited in most cities and villages.

For feeding stock, buttermilk is better adapted to pigs than to other animals. I believe that for swine feeding it is about as good as skim milk. I would prefer skim milk, as there is less danger of the animal's digestive system being deranged while feeding skim milk.

Whey is a by-product from the manufacture of cheese, and possesses more or less feeding value when fed to swine. Some experiments go to show that it is about half as valuable as skim milk, but I have never been able to realize that much from it while feeding swine or calves.

W. MILTON KELLY.

Feeding Cattle on a Small Farm

ITHINK the most reliable information a man can get on cattle feeding or in any other branch of agricultural pursuit is obtained from practical experience for a number of years in that line. I have had experience in feeding cattle on a fair-sized farm for several years, and I think a steer will gain just as fast and get just as fat on a small farm as on a large one.

To preserve and maintain the fertility of the soil is the first requisite of successful farming. If this could be done by raising corn year after year the farmers would have just as good a thing as they wanted, without feeding cattle. As they would not have to work more than six months in the year to do this, and cattle must be looked after every day, this would be preferable.

A great many farms, both large and small, are run in almost this way. If this is pursued for many more years, what will the children who inherit this land do with it?

In feeding cattle I consider it from two standpoints. First, will they pay a profit in dollars and cents after I have paid for what they have consumed? This is indeed an important part of it. I also consider whether the land is benefited or not by the cattle being fed on it.

Experience teaches me that feeding cattle is one of the surest ways of building up and maintaining the fertility of the land. I think it necessary to keep a few well-bred cattle on a farm, whether it be large or small.

I do not think a man should jump in and stock up heavily to begin with, with any kind of cattle at any kind of price. But I do think he should determine to engage in it as a permanent part of his business for a number of years, lay the foundation in the best blood of whatever beef breed he prefers, avail himself of up-to-date methods of feeding and caring for his stock, and gradually grow into it.

Let him acquire experience and knowledge of the business as his herd increases. The small farmer should meet with just as good success in feeding cattle as the large farmer. If a steer is bred right and fed right he will pay the small farmer his board bill when he is sent away.

R. B. RUSHING.

Wheat Chop

VERY few people who use middlings, ship stuff or shorts in feeding stock are aware of the frauds that are perpetrated by the millmen or agents by putting in sand, red clay, saw dust and other things. If they will read the reports of the chemical department of the departments of agriculture in the several states it will be seen that these adulterants are used by many of the millers or companies offering these feeds for sale. Very often the sweepings of the floors in the mills are put on the market as a pure concentrate.

I have long since learned to get ahead of these manipulators and found a cheaper way to provide protein for my stock. If I have none on hand I buy up a lot of good wheat, take it to the mill and have it run through the corn stone and ground

as fine as possible. This is called "wheat chop," and it is better than the best middlings money can buy, because the animals get the benefit of the entire content of the grain. Any kind of wheat will do that is sound, dry, not shriveled and is free from trash and dirt. The country miller has no chance to adulterate in the grinding without detection, as you can stand by and see your wheat ground if you think proper.

Here our best brand of middlings costs one dollar and seventy-five cents a hundredweight, when good wheat can be bought for one dollar and fifty cents a hundredweight. I usually give each cow five pints of chop along with one pound of cotton-seed meal twice a day.

Virginia. E. W. ARMISTEAD.

Summer Forage in the Southland

THERE are but two legumes to be considered in this connection—cow peas and desmodium (beggarweed). For the purpose in mind both should be sown broadcast. Probably the Whippoorwill pea is best; there is but one variety of desmodium. Wherever this will grow we prefer it to peas. It is free from disease and insects and can be pastured or cut repeatedly. It is a heavy yielder, great soil improver, fine feed, and if any is left to make seed, it reseeds itself for next year. It is adapted to Florida, and to the southern third of South Carolina, Georgia and the Gulf states.

Beside these legumes there are three other crops very fully supplying the needs for summer forage—rutabagas, sorghum and Essex rape.

The former may be satisfactorily pastured by hogs, but of course makes only a single crop. Sorghum is one of the best of all feeds when cured; as pasture it is hard to beat, but the late growth, after the earlier crop has been cut or pastured, is sometimes poisonous. For this reason stock should be turned onto it gradually, that its effect may be observed. Anywhere south of the mountain section it may be sown as late as September 1st and will make feed before frost comes.

Essex rape may be sown any time between the middle of July and the middle of October. It is best sown in drills, usually two feet apart. It gives pasture in six weeks and lasts all winter. Its feeding qualities are very superior for growing and fattening animals, as well as for milch cows. Its great value justifies very much more extended cultivation.

Though these are the crops most fully meeting the general demand for hog and cow feed in late summer, there are a few others admirably filling certain requirements. German millet and fodder corn sown in drills or broadcast for soiling; Kafir corn grown like sorghum, but particularly adapted to dry localities, stand first in this class.

The hope that crimson clover might prove useful as a summer crop has not been justified by results. Clovers and vetches in the South must be classed as fall and winter cover crops.—The Southern Ruralist.

The Making of Bran Mash

ONE of the most common of all feeds is the bran mash, yet not every one knows how one should be made. It is only in racing stables and large studs, as a rule, that one sees it done properly. To make a bran mash, first wash out a bucket with boiling water, then pour in the quantity of water required, say three pints, and stir in three pounds of bran. Cover up and leave it for a couple of hours or more if not required for immediate use. A mash takes hours to get cold, and is often given to a sick horse too hot, and refused when it would have been taken if properly prepared and given warm instead of scalding hot.

The addition of a tablespoonful of salt to the ordinary mash of a Saturday night can be recommended to keep down parasites and promote digestion, but should not be part of a sick horse's diet unless specially ordered.

A mixture of linseed and bran is often prescribed, both as food and a poultice. To one part of linseed, two of bran is a desirable proportion for both purposes. To get all the feeding value out of linseed, several hours should be allowed for cooking, not merely infusing, as with a bran mash, but gently simmering on the side of the stove. The vessels should be filled, and toward the end the lid may be taken off and evaporation permitted while cooking.—Live Stock World.

Live Stock and Dairy

Useful Facts for the Stock Raiser and Dairyman

Farm Butter Making

AT THIS time of the year there are many conditions which are likely to cause the production of an inferior grade of butter on the farm. The cause of this poor butter may be traced either to a single poor condition, or perhaps several of them. By carefully carrying out the following conditions, first-class butter should be produced:

Cream

Hand-separator cream produces better butter than that separated by any other method. The deep can (shotgun can), surrounded by cold water, is second best; pans and crocks are third best; and the water-dilution method comes last.

The cream should be kept in as nearly sweet condition as possible until enough has been gathered for a churning. This should then be soured, or ripened. To keep the cream sweet, while gathering enough for a churning, keep the can containing it surrounded with cold water, or better, perhaps, hang it in the well. To ripen, place where it will become somewhat warmer (at a temperature of seventy-five to eighty degrees), until it is sour enough; then cool down to a temperature of from fifty-five to sixty degrees, which is right for churning. Let it stand at this temperature for an hour or so before churning, if possible. This will cause the butter to come in better condition.

Cream that is being ripened should be thoroughly stirred several times before it is ready for churning.

It is often advisable to save some of the buttermilk of one churning to be used as a starter (the same as yeast in bread making) for the next batch of cream. Add a small amount of this old buttermilk to the sweet cream which has been gathered for the new churning, thoroughly stir it, and it will ripen very much more readily. Care should be exercised to keep this old buttermilk in as good condition as possible. This method of cream ripening will be found excellent in winter.

Temperature

Every butter maker should have a good dairy thermometer, and then use it.

One of the main causes for having to churn from one to five hours is either too warm or too cool temperature of the cream. With a temperature of from fifty-five to sixty degrees, butter should be produced in from thirty to forty-five minutes, providing the other conditions are right.

Churning

Strain all cream into the churn. This will remove all clots and particles of curd, and there will be no danger of white specks in the butter.

Do not fill the churn over one third to one half full. Give the cream room for agitation, which insures quick churning. Turn the churn just fast enough to give the cream just the greatest amount of agitation. In case a barrel churn is used, turn it so the cream has time to fall from one end to the other with a distinct thud.

Coloring

In order to make a uniformly colored butter for the entire year, some color must necessarily be used. Very little will be required during the spring and summer months, when the cows are getting green feed. During the fall and winter more color will be required. No harm is done by moderately coloring butter with a good commercial color. Colored butter can be sold on the market for a very much better price than that not colored. White butter is not nearly so appetizing as that which contains color. The color should be added to the cream in the churn before starting to churn.

When to Stop Churning

The butter should be gathered until the grains become about one half the size of a grain of wheat. Then draw off the buttermilk through a strainer, and wash the butter. If the butter is gathered until it is in one large chunk, it cannot be washed or salted satisfactorily.

Washing the Butter

After drawing off the buttermilk, pour a pailful of cold water in the churn over the butter and give the churn four or five quick revolutions. Then draw off the first wash water and put on the second, and turn as before. If the butter is hard enough after the second washing, draw it off and take out the butter.

The washing of the butter removes the buttermilk and makes the butter keep for a longer time. It also puts it in better condition for salting.

Salting and Working

The butter should be taken from the churn in the granular condition and the salt added before it has been worked together. Usually about one ounce of salt is added for each pound of butter. The salt should be worked through the butter with a ladle or paddle and not with the hands.

Once working, at the time of salting, is usually sufficient, providing the butter is hard enough when removed from the churn. If the butter is somewhat soft when taken out, it can be salted and set away for a few hours until it gets hard enough to finish.

Butter is usually worked enough when the water has been removed so that the butter will bend without breaking. Too much working will spoil the grain of the butter and make it salty; while leaving too much water in it will spoil its keeping qualities.

Packing

Pack or print the butter as soon as it has been worked sufficiently and put it in a cool place until it is ready to be taken to the market.

Remember that the appearance of the package, as well as the way the butter is packed, has a great deal to do with the selling price.

Butter that has been carefully made and handled according to the above precautions can be readily contracted, by the year, at a price ranging from thirty to thirty-five cents a pound.—H. M. Bainer of the Colorado Agricultural College.

Breeds That Produce Fat Lambs

ALTHOUGH the butcher is prone to recognize dark-faced mutton as the best, yet the white-faced or speckled-faced lamb which finds its way to the chief markets has proved eminently serviceable for the trade, growing very readily and to good weights. Longwools seem fitted by nature to take on a larger proportion of fat to flesh than shortwools, hence the rapidity with which a Down cross grows.

Of the Hampshire Down, which is a hardy breed, it may be remarked that it has shown the way in early maturity. The progressive policy of breeders has been based upon well-defined lines. It is not sufficient in their view to feed early maturity into a breed. It requires to be bred into it as well. Thus we find the practise universal of using ram lambs. Even those with a strong bias toward other breeds must admit that no breed handles more kindly when skilfully fattened than this. Farmers who make fat-lamb production part of their business buy a large number of the ram lambs at autumn sales. They have a strong preference for big sheep, and strong, robust ram lambs will always make their monetary value when the owner of a white-faced flock is in the neighborhood. One point the Hampshire Down breeder is striving to attain is an increase in prolificacy. The belief is firmly held by many leading ram breeders that to make the most of the ewe flock, and to attain to the standard of the Dorset Horn in point of prolificacy, twin ram lambs must be bred from. This is true of the flockmaster, but the average farmer is more concerned with the individual lamb he is purchasing. If Hampshire Down breeders can only keep their lambs big in scale, even a trifle coarse from a breeder's point of view, they can always retain the markets. The Hampshire Down lamb in its pure state has a wonderful capacity for laying on flesh.

The Oxford Down is a near neighbor of the Hampshire; indeed, it was evolved by the use of that breed and the Cotswold. It differs essentially from its Down parent in form and fleece. Its likeness to the Cotswold is evident in its bearing, though in flesh the aim of the breeder has been centered in attaining to the quality of the Down. Oxfordshire breeders have certainly produced a ready-fattening sheep.

They are following on the traditional lines by which early maturity has been attained in other breeds, although they have not advanced on quite the same system as Hampshire Down breeders. Curiously enough, breeders seem to prefer the shearing to breed from, although they are only too ready to dispose of their rams as lambs. The Oxford Down is seen at its best when crossed with another Down breed. It is a class of sheep which Nature has designed as a ready fattener. Probably its reputation has of late years been most dependent upon the white-faced cross. It has practically within the past

ten or fifteen years revolutionized Border sheep breeding. Some experiments have been conducted in the north of England testing the readiness of the produce of this breed on white-faced ewes to come to the block. From twenty half-bred ewes the Oxford ram was credited with thirty-six lambs, the Wensleydale with thirty-six and the Border Leicester with thirty-four. As soon as the lambs had turned fifty-eight pounds they were sent off. By the middle of June twenty-eight of the Oxfords, twenty of the Wensleydales and nineteen of the Border Leicesters had been disposed of. In addition to maturing thus early, the breeder was able to fatten and market his ewes earlier than would otherwise have been the case, thus effecting an all-round saving.

The Suffolk is probably much indebted to the old Norfolk variety of sheep for its reputation as a lean-mutton producer. It has scored a series of remarkable successes in the block test at show, and produces probably darker mutton than any other breed we possess. Some of its flocks are graded up to a very high pitch of excellence, but the fact that honors are not so well divided in the show ring as they might be suggests that there is more inequality in the flocks than is the case with some of the other Down breeds. It is used very extensively for the production of fat lambs. On a breed such as the Lincoln and Leicester the writer could imagine no better cross to get mutton. These longwools are known for their fat production, and the influence of a lean-mutton breed upon them should produce a blend of the type most desired where such a white flock is kept.

The Shropshire sheep introduces a breed of smaller stature than those referred to, but in quality of flesh and wool it holds its own with the best of them. Roughly speaking, the Shropshire ram trade may be divided into two classes—namely, breeders' sheep and farmers' sheep. The latter go under the euphonious name of "pasture rangers." The real quality type of Shropshire that wins in our show yards is not the type that farmers like for the fat-lamb trade; indeed, with the larger Down breeds available the Shropshire is somewhat at a disadvantage. Like the Southdown, small stature is a distinct drawback when the object in view is production of heavy weights in the shortest time. The Shropshire cross on the white face or on the big Kerry Hill ewe produces a handy weight suitable for later marketing.

Turning to the lighter-faced sheep, the Dorset Horn in connection with fat lambs is of necessity worthy of first consideration. This breed, which produces the earliest house lamb, has early maturity and prolificacy as its most important features. As a rule, for the purpose of producing early lambs it is kept in a pure state, for the extra month may make all the difference in price. One strong point about the Dorset or Somerset Horn is that it can produce about a lamb and a half in the flock. Larger flocks have been recorded, but a lamb and a half would be a good average. For crossing the breed has been tried, but it is most valuable when used in its pure state. The Ryeland breed has also participated in the production of fat lambs. It is not, however, so large as the Hampshire and Oxford ram, being, in fact, rather behind the Shropshire in weight. Nevertheless, it produces a quality of sheep which nurtures well.

The Dorset Down, although not a white-faced breed, might also be mentioned. It has not yet come into prominence outside the immediate sphere in which it is bred. It is a fine type of sheep, probably owing to its origin—the Southdown cross on the Hampshire. It has less bone and substance than the Hampshire Down, having imbibed not a little of the Southdown's quality.

W. R. GILBERT.

Visiting Other Flocks

LEARNING of the methods which have brought success to other business men has helped many a beginner to improve every opportunity while making his own start in a life's undertaking.

To become a true master of sheep breeding it requires the desire to do it correctly and to persevere for many years in continuation. A solid foundation is the first and greatest of all requirements, so do not start in a hurry, but do it well. A few ewes of undeniable breeding and correct individual merit are more to be desired than a larger number of inferior ones. Books and articles have

been written on this subject, and have done a great deal of good in scattering practical ideas among fresh minds, but your best way to gather the most reliable and practical information is to visit the best breeder within any ordinary distance by rail. Go and stay a day or so, and have a few hours conversation with the breeder himself, and there you can learn of practical ideas which have given good results, both in feeding and breeding. By personal interview numerous things can be learned which are hard to tell on paper.

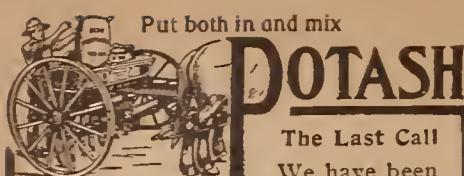
No matter whether you are making purchases or not, any large breeder will be only too pleased to have you go through his flock. If you are contemplating the founding of a flock, or are a new breeder, you will be greatly profited by a visit to the largest and most reputable breeder within your reach. And if you are an old breeder, you would enjoy seeing how others do things. Sometimes I think that breeders miss a great deal by not having their efforts more united. More visits with each other would bind them closer together, and each would profit by the experience of others. From personal experience I am sure that every such visit adds to your general knowledge of the business. Every visit I have ever made to another flock gives new ideas in breeding and feeding.

Successfully breeding any sort of live stock is a much greater work than many think who have never been at it. It used to be the general opinion that those were fit for the farm who could not do anything else. It is quite true that most any one can make an existence on a farm, but the true breeder is a different person altogether. As in all other paths of life, there are many engaged, but few really at it with all their might. The sheep business requires more steady breeders who desire to improve their own flock as well as the sheep standard of the country. Those who jump in and buy a few hundred or thousand head, and expect to make their fortunes in a few months, are quite often surprised. The same is true of men who have tried the "grab the whole thing" in other lines of business. Sometimes a great success is achieved, and sometimes it is the reverse. The same is true in all lines of business in all parts of the world.

For a steady line on the farm the sheep have proved themselves to be more profitable than any other live stock. And to those who are founding flocks I wish to say that you should view it as a life's work, and not to yield you a "gold mine" and then pass away. Look forward to reaching your ideal in future years, even though it may be far distant. Visit other breeders the first thing of all, and when you have gathered the knowledge you wish to for a start, you can then take steps forward with greater satisfaction than if you had boldly started out in the first place.

Your first few years should be spent in building such a live flock as will produce the very highest class of lambs. The first step is to get a few ewes from the oldest and most reliable breeder you know of, as these are the only ones that will give you uniformly good results, such as you desire. In a couple of years you can tell which ewes are not breeding just as you would wish, and these can be discarded, as well as their lambs, if at all undesirable. The lambs from the better ewes should be kept in the flock as breeders. Soon you have a most excellent breeding flock, and that will be the real foundation of your business. Keep your best young ewes, regardless of what price may have been offered you. America needs more steady breeders in the sheep business who desire none but the very highest class obtainable. The common sort are in enough hands, so when you start, make it your sole aim to have a flock superior to as large a percentage of the others as is possible.

The better your sheep are, the larger will be the profits. When breeding pure breeds do not huddle down in your little nest and think that everything will come to you. You must get out and meet other good breeders and exchange ideas. The experience of other breeders will assist you in breeding the top notchers, and when you have once placed your flock among the leaders of the country, there will be great demand for the surplus of your flock. It is a great satisfaction to know that the sheep you sell will be admired and do well in any country to which they go.—Howard A. Chandler in *The Shepherd's Criterion*.



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Farm Notes

Interpreting the Soil

Director of Famous Rothamsted Experiment Fields Visits Illinois, Ohio and New York With True Story of Half a Century's Results

THE experiment stations of Illinois, Ohio and New York recently had an interesting visitor in the person of

Director A. D. Hall of the oldest soil-experiment fields in the world, those at Rothamsted, England, made famous by the fifty years' work of Lawes and Gilbert, the records of which are to-day the most complete and reliable authority on this subject in the literature of agriculture. In Illinois and Ohio he found the oldest and most important field tests of soil in the United States. Men like Director Hall, Prof. Cyril G. Hopkins of Illinois and Director Charles E. Thorne of Ohio bring us an agreeing story of the soil worked out through many decades of most careful, unbiased search for the truth. Landowners from more than twenty counties came to the college of agriculture, Urbana, Illinois, July 7th and 8th, to hear the soil addresses and see the university experiment plots. All intelligent farmers are beginning to understand that none of our soils are inexhaustible, and many are eager to learn the truth in detail, seeing plainly that our most common methods of cropping are not sustaining the fertility of the land.

The thirtieth successive crop of corn was seen growing on one plot of our typical prairie land to which no plant food had been returned in that time. The yield the last three years has averaged twenty-seven bushels to the acre, while a few rods distant, on land originally the same, where a corn-oats-clover rotation has been maintained, with the more recent addition of lime, phosphorus and potassium, the yield has been ninety-six bushels to the acre for the same years.

Director Hall was a model of good teaching in presenting his chosen bits of data. Each idea was clearly developed, put into the commonest and clearest terms, with illustration and proof. Several lantern slides were used to show Rothamsted results. Professor Hopkins, Mr. Mann and Mr. Allen also had important parts on the program. With the best that science knows of the soil to-day directly represented on the platform and in the near-by test plots, and with the people of the audience facing the greatest problem in agriculture, that of permanently maintaining the fertility of the soil, this gathering takes on deep and broad significance. Its ideas and its speakers made a fine impression on young men. Following are some of the ideas presented by Director Hall:

It has been a distinct feature of the Rothamsted experiments that the plan of soil treatment or rotation once decided upon for a field and its plots should be carried forward without alteration. Some of these tests have run thus for sixty-five years. The response of the crop to the fertilizers applied was so ready and uniform that the first crude question of yield was well settled in the first twenty or thirty years. Then it was found that the valuable data taken shed increasing light on all sorts of problems scarcely considered at first.

Three Plots in Grass Fifty Years

One Rothamsted field, always in grass, so far as known, has been in a definite experiment for fifty years. The hay is removed twice a year. No plant food has been returned to Plot 1, and forty-six different species of plants have established themselves. The growth is seven inches high and yields only a ton to the acre.

The next plot, which has been treated with phosphates and potash, has a growth nearly twice as high as the other and a yield of two and one half tons of hay. Here clover has gone ahead and forms more than half the growth. The reason is plain; the clover is able, through the bacteria that form bunches on its roots, to draw its own nitrogen from the atmosphere, while the plants that are not legumes have but a scant supply of this element. It has been found that legumes improve the soil more than a direct application of nitrogen fertilizer.

But the third plot, having an excess of nitrogen, has gone almost exclusively to grass, only two or three per cent of legume plants remaining.

In this life-and-death competition of the species the least change in the conditions is sure to benefit one set of plants and change the balance of power.

The difference of species in resisting starvation was illustrated by the results of a four-year rotation of turnips, barley, clover and wheat which has been grown for sixty years, one plot receiving no

fertilizer, the second phosphorus and potash and the third a complete fertilizer. Considerable wheat is grown on all three plots, and the barley stands the starvation of the first plot nearly as well. The clover is much reduced on the unfertilized plot, but does well on the other two. But the turnips are almost a failure where no plant food is applied, while they yield twenty tons to the acre on the best plot. Wheat stands what is fatal to the turnips.

Specific Effect of a Fertilizer

Nitrogen produces at once a greener and more abundant leaf growth and makes the whole plant go ahead. It increases the vegetative parts of the plant, and an excess of nitrogen tends to keep the plant growing too long, and thus retards the ripening. While an excess of nitrogen doubled the amount of wheat straw, it reduced the per cent of wheat grain from sixty-two to forty-eight. It also makes the plant more susceptible to fungous diseases. High nitrogen plots of mangels suffer greatly every year in this way, while three feet away on other plots the beets are sound and healthful.

It is the special effect of phosphorus to ripen the grain, to hurry on the production of flower and seed. It makes ten days' difference in the appearance of the barley ear. Phosphorus is also an extraordinary stimulant to the formation of roots and side shoots, and thus helps the English farmers to get a better stand of plants in the spring.

Doctor Hopkins of Illinois called attention to the fact that the ripening effect of phosphorus was apparent in the oldest series of experiments at the university. He had noticed for half a dozen years that the continuous corn plot usually gets caught by the frost in ripening its twenty-five or thirty bushels to the acre, while the plot with plenty of manure and phosphorus ripens one hundred bushels to the acre two weeks earlier. Answering a question, Director Hall said he had never known any injurious effects from phosphorus. Some of the Rothamsted plots had received ten times as much as needed. The excess lies dormant in the soil and is available for future crops. Professor Hopkins said that phosphorus had increased clover a ton to the acre in his experiments the last five years.

It is absolutely essential to the manufacture of carbohydrates (sugar and starch) that potash be present; to increase this product in the plant, increase the potash. Beet yields at Rothamsted have been more than doubled in this way.

Lime Helps Heavy Clay Lands

The remarkable improvement of soil texture wrought by lime is well illustrated in a Rothamsted field. It was so heavy, wet and late a clay that it had to be abandoned as an experiment plot, and it lay idle for a long term of years. Analysis showed that it lacked nothing but lime, and when this was added the land became workable, warmer and earlier. Lime has the power to bunch together the extremely fine particles of clay and cause them to act like grains of sand, allowing the soil to dry out better and warm up for earlier planting. Lime also neutralizes the acids from green manures and other substances rotting down in the soil.

Farmer's Experience With Fertilizer

A fitting part of this program was the report of Mr. Frank I. Mann, of Iroquois County, Illinois, showing very profitable results from applying fertilizer extensively on his own farm in accordance with the Illinois soil investigation results and advice. Analyses of his soils (by his son at college) showed most of the land low in phosphorus, and some of it lacking nitrogen. The treatment, except where otherwise stated, being half a ton of ground rock phosphate to the acre.

In an eighty-acre field of oats the treated part produced eighty bushels to the acre; the untreated, sixty bushels. The profit above treatment was three dollars an acre, and nine tenths of the phosphorus applied remained in the soil.

In a sixty-acre corn field the forty acres treated yielded fifty-one bushels the second year after treatment; the twenty acres untreated, thirty-four bushels; profit, three dollars and fifty cents an acre.

Eighteen acres of clover sod, treated, yielded ninety bushels of corn to the acre the first year, fifty bushels the second year, when the corn was injured by storm, one hundred bushels of oats the third year and four tons of clover the fourth year. Only half of the phosphorus applied was used in these four crops.

Last year eighty acres of oats produced forty bushels to the acre, weighed thirty-five pounds to the bushel and germinated

ninety-two per cent by test, while surrounding fields, untreated, yielded twenty-five bushels to the acre of oats that weighed only twenty-six pounds to the bushel and showed a germination test of only about fifty per cent. The first cutting of clover the second year was two and one half tons; untreated, one and one half tons.

In an eighty-acre field of corn the treated part produced sixty-two bushels to the acre, while the untreated made only forty-five bushels. Part of this field needed nitrogen as well as phosphorus, and ten tons of manure to the acre were applied on these parts; the former low yield being thus increased to sixty bushels.

Among many other good things Mr. Mann said about applying science on the farm is the following: "Many farmers look upon science on the farm as a very complex matter, and dream of blast furnaces, retorts, laboratories, etc. But those things are not necessary to apply science to farming. They may be necessary for some one, but not for the farmer. His course is a simple and easy one. It is to take what the experiment station has prepared for him." ARTHUR J. BILL

Billion-Dollar Grass

AT ONE time last winter good hay in this vicinity was worth, or at least sold for, twenty-two to twenty-five dollars a ton. You may be sure we did not allow any hay to go to waste during the hay-feeding season, yet our stock came out in spring just as well, as sleek and as healthy as ever. But I made up my mind that whatever might happen, I would have plenty of feed to carry my stock through the winter without having to buy hay or other coarse fodder.

Fortunately, our hay crop is nearly double what it was last year on the same area. In addition we shall have more corn fodder. But to make quite sure, I sowed a big patch of millet. Several seedsmen recommended to me the newer Japanese (barn-yard) millet, with which I have had no previous experience. Now I have a half acre of it growing, and the question is, "What will the harvest be?" Can we rely on seedsmen's descriptions of such things? One member of the trade, a little inclined to exaggerate, calls it the "billion-dollar grass," and makes the most extravagant claims for it and its value. In a number of catalogues I find descriptions of it, of which the following is a fair sample: "Entirely distinct. It grows six feet to ten feet high, and yields ten to twenty tons of green fodder an acre. When cured it makes an excellent quality of hay. Cure as you would a heavy crop of clover. It may be sown from the middle of May to the first of July, broadcast, at the rate of fifteen pounds of seed to the acre, or of ten to twelve pounds if sown in drills and to be cultivated."

Just now a copy of circular No. 81 issued by the Ohio Experiment Station comes to hand. Had I seen this a month or two ago I would probably not have grown more than one eighth of an acre of this wonderful "billion-dollar grass." The circular refers to the Massachusetts Agricultural Report of 1901, in which it says that "barn-yard millet is not suitable for hay," and says: "While it yields immense crops, this station has not found it a very palatable feed and does not consider it as well suited to average Ohio conditions as the foxtail millets."

I hope, however, to overcome the objection of its being "unpalatable" by the use of molasses, a foodstuff that is now coming more and more into use. Moistened with molasses, somewhat diluted, animals will eat almost anything otherwise suitable for fodder. First I want quantity. I can give it quality by the addition of molasses, oil meals, cotton-seed meals, etc.

T. GREINER.

The Grain Drill for Fall Sowing

THE grain drill is an economical machine as a labor saver for sowing small grains and distributing fertilizer. It does the work better and faster than it can be done by the old method of broadcast sowing. Aside from this it puts the seed in the bottom of small furrows and covers them lightly, which is a great help in protecting the plants of fall-sown crops from severe freezing in the winter season. The wheat or other grain comes up from one to two inches below the general surface of the soil, then when it freezes and thaws, fresh dirt drops in on the plants and keeps the roots from being heaved out. The Georgia Experiment Station found that winter oats sown with a drill was not nearly so liable to be injured by frost as when sown by hand broadcast.

It is a good plan, when using the grain drill, to run it at right angles with the prevailing winds. In this way the snow will lodge in the furrows and help to protect the crop. If the drill is run parallel with the direction of the wind the snow will often be blown out of the furrows and will afford no protection to the crop.

A. J. LEGG.

Poultry Raising

Doctor Fox and His Bantams

Dr. WILLIAM FOX, of Bristol County, Massachusetts, is known, by reputation at least, all over this country wherever prize bantams are bred. Doctor Fox has been one of the most successful exhibitors of bantams for a number of years, and his work is of particular interest because of the fact that it is carried on in his spare moments. Busy physician as he is, the doctor finds pleasure and recreation in working among his buff, black and white miniature Cochins. He also finds some profit, but that is only incidental.

The houses and yards for the bantams have been built very largely by the doctor himself, who is fond of working with

poultry keeping as a recreation for business and professional men who need outdoor exercise. E. I. FARRINGTON.

Poultry Pointers

Ground bone is good for fowls while molting.

More half-grown turkeys die from lice than from any other one cause.

If you are raising a crop of millet, keep a portion of it unthrashed and let the hens thrash it out next winter.

Fowl diseases are caused by foul coops and foul drinking vessels. Foul yards are also great sources of disease.

If the poultry refuse to go into the



A Pen of Cochin Bantams Belonging to Doctor Fox

hammer and saw. He gets up early in the morning and spends an hour or two with his chickens before taking up his professional duties. He hatches between three and four hundred chicks a year, using three small incubators. These machines are designed to hold sixty eggs of the ordinary size, but will accommodate one hundred bantam eggs. As is generally known, bantam eggs do not run strongly fertile, and if a fifty-per-cent hatch is secured the doctor thinks he is doing well.

In order to easily keep track of the pedigree of each chick, the doctor has a wire cage divided into four compartments for use in one of his incubators. Each compartment holds the eggs from a particular pen. As the chicks hatch they tumble into the wire chamber underneath the egg rack.

Brooders are used, and after the chicks become large enough so that artificial heat may be dispensed with, they are removed to tiny houses which the doctor has constructed upon lines of his own, and which are built in such a way that they can easily be cleaned.

It is particularly important in raising bantams that lice shall be kept in subjection. Many bantam chicks are lost because this matter is not given sufficient attention.

Cochin bantams lay eggs which are quite large enough to be used in the kitchen. It is estimated that three bantam eggs are the equivalent of two eggs laid by hens of the larger breeds.

In suburban communities and small towns where there is a limited amount of yard room a small flock of bantams will keep a family supplied with eggs much of the time, although it is hard to get them to lay until after the first of the year.

Doctor Fox gets much amusement from his bantams, because they are so friendly. The little birds are timid of strangers, and if frightened will fly for a long distance and over a high fence; but it does not take them long to get acquainted, and if they are handled sufficiently they can be picked up and petted in the yard. They will remain quietly in the hand, and do not object to being stroked and petted.

The breeding classes are confined in small continuous houses having scratching pens attached. The houses have cement floors built under the doctor's direction and very thick. The doctor is strongly in favor of cement floors, because he has had little trouble from rats, which formerly bothered him a great deal, since these floors were constructed.

Doctor Fox is, of course, first and last a fancier, but he considers bantams to be highly recommended as pets for children, even though they are not of prize-winning strains, and he also believes in

well enough acquainted to mate. The final selections should be made not later than the first of November.

The food that laying hens eat flavors the eggs. If you doubt this, feed onion tops, and note the result. If onions give eggs an unpleasant flavor, nice clean food in suitable variety will have an agreeable effect.

Where poultry and small fruits are grown on the same land the droppings are often valued at fifty cents a year for each hen. Probably the value of hens for destroying insects is almost as great as the manure value.

Pekin ducks are great eaters. They seem to eat almost as much feed as hogs, but they grow faster than any other bird or animal. They need fresh meat, cut bone and a great deal of grit, and they need grit in sizes to fit their age and development.

Hens, like other stock, may be taught to get over a poor fence. After they learn how to fly over a low fence, the highest fence one can build won't keep them; but if young poultry is confined by good tight fences six or eight feet high they seldom attempt to fly out unless compelled to do so by hunger.

Teach the children the essential features of successful poultry raising. They learn quickly, and the knowledge is valuable to them. Tell them that the principal difficulty comes from vermin and that vermin breed in neglected premises. Teach them that corn is not an egg-producing food, and tell them why.

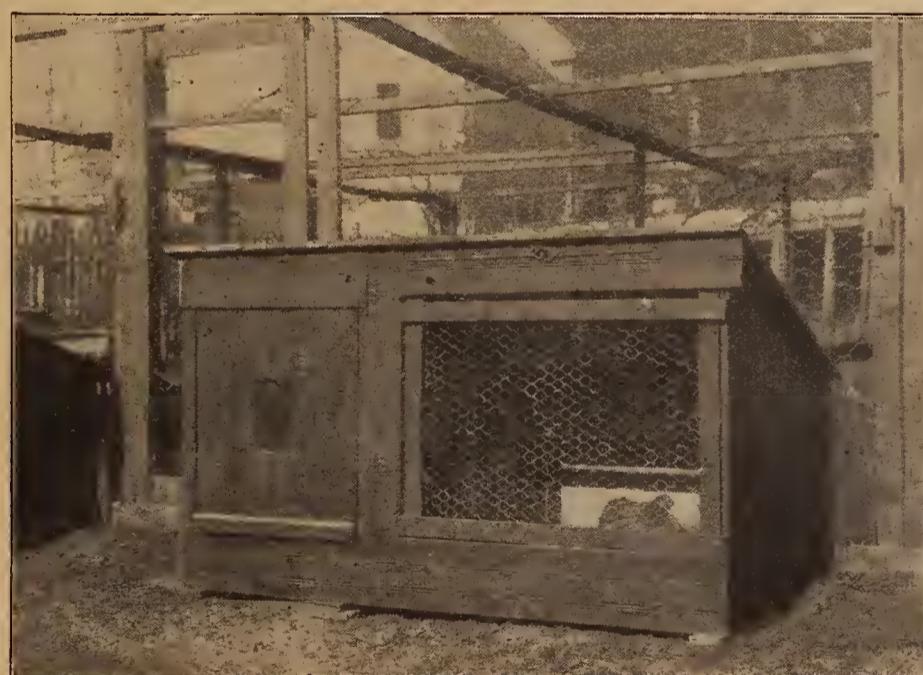
It often happens that a small flock of poultry does well and is unusually profitable. When the owner undertakes to do a larger business, success is left out of the problem, because increased facilities have not been given the necessary consideration. If a person has been accustomed to keeping twenty-five fowls, accommodations should be more than doubled for fifty.

In breeding fowls for the market, individuals should be chosen which have small bones and plumpness as a first consideration. Shortness of leg and neck are necessary, but these points usually belong to the plump bird. There is more in breeding from good individuals than there is in breeding from any one particular breed. We must have a good breed, of course, but its improvement depends on the selection of the right individuals for the breeding pen.

W. M. H. UNDERWOOD.

Among the Chaff

The busy hen is the happy hen. The happy hen lays the eggs.



A Pen of Bantam Chicks. The Screened Front Slides Out. The Strings Govern the Doors Between the Coop and the Scratching Shed

eggs: Make the entrance to the nests from the back, to make them dark.

Disease among poultry usually comes from overcrowding or confinement in unhealthy quarters. This, however, is not excusable on the farm. There is plenty of room and sanitation should be perfect.

Corn is the very best feed for fowls when they are on pasture where they get plenty of insects and clover to pick at. Corn is not a good feed for poultry that is kept in yards too small to grow green stuff.

Now is the time to arrange for mating up next year's ganders and geese. It requires a long time for geese to become

mow some of the second-growth clover and save it in a barrel or box for next winter.

Since the good roads have come you can't scrape up road dust for the hen houses, but you can dig into a bank somewhere and get a nice lot of loose earth for the biddies to squabble in. Good for them.

Hens don't like to drink out of muddy water any better than you and I do. Don't force them to do it. Plenty of good, pure water every day helps to bring lots of eggs. Eggs are largely liquid, anyway.

E. L. V.

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Save time, horses, work and money by using an Electric Handy Wagon.

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Of course we do not undertake to adjust petty differences between subscribers and honest advertisers, but if any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction.

FARM AND FIRESIDE is published on the 10th and 25th of each month. Copy for advertisements should be received twenty-five days in advance of publication date. \$2.00 per agate line for both editions; \$1.00 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns $2\frac{1}{4}$ inches, length of columns two hundred lines. 5% discount for cash with order. Three lines is smallest space accepted.

Letters regarding advertising should be sent to the New York address.

The Wonderful Story of Alaska Wheat

"OUT of the North the wild news came." Now out of the city made famous by flour comes a wild story of a wonderful wheat christened "Alaska." It tells of a new (?) variety, "discovered" and "perfected" in the "secret and far-away fields of Idaho," "that will yield under average conditions two hundred bushels of wheat to the acre." It comes in neat, imitation typewritten form as a news story from a "special correspondent." Its multitudinous copies come to daily newspapers, weeklies and farm papers far and wide over the Union. And, we regret to say, some of the papers are gullible enough to publish it, even though the earmarks of free advertising stick up out of the first paragraph.

There are two parts to this Alaska wheat story—first, the story, then the wheat itself.

The story is a good type of modern yellow journalism—newsy, breezy, catchy, imaginary, sensational, mendacious and avaricious. Its first object is to beat publishers out of advertising space; its ulterior purpose is to rake shekels from unwary farmers by selling a seed-wheat novelty which may or may not be worthless to them. In its campaign of exploitation it is repeating the history of the Spencer seedless, coreless, bloomless, wormless apple, and the history of nitro-culture, the vest-pocket fertilizer that was to send manure spreaders to the fence corner.

The story is told cleverly—that is, trickily—but the "special correspondent" gets into serious trouble by fault of superficiality when he attempts to handle facts. Lack of knowledge and too much "play up" give this scheme away. He starts out brazenly:

"If some one were to tell the average wheat farmer that it was possible to raise a wheat crop on United States farms in one year of five billions of bushels, he would brand his informant as a liar pure and simple, and yet had the farmers in America planted a wonderful new wheat seed that has been perfected by [some good, old father Abraham farmer in Idaho], that is just what the yield would have been this season, based upon the probable crops of the year.

Connected with this assertion is the greatest wheat story that has ever been told, far greater than the wildest dreams of the wheat king in the security of his vast domain and the demand for his golden harvest. The United States paid eighty millions [sic] of money for Alaska, and yet the great gold payment Alaska has returned sinks into insignificance when compared with Farmer _____'s Alaska wheat, which in the secret and far-away fields of Idaho he has gradually brought to perfection, until he has given to the world a wheat that will grow under average conditions two hundred bushels to the acre."

In the first paragraph a full name and the address were given, in order to let the credulous know where to get some of this wonderful "wheat seed."

Of course, every school boy ought to know that the purchase price of Alaska was \$7,200,000, but this bright and breezy press romancer of advanced, commercialized journalism "plays it up" to the more catchy sum of eighty million dollars to impress the "average farmer."

In his so-called "history of this almost miraculous seed" no case is given of an actual yield of two hundred

bushels of wheat from an acre of ground. That fancy claim is an estimate based on a reported yield of 1,545 pounds from seven pounds planted by the originator. The claim of two hundred bushels of wheat to the acre under average conditions involves about the same ratio of exaggeration found in the statement that the United States paid eighty millions of money for Alaska.

This Alaskan story has other Munchhausen wonders to relate. It says:

"The yield is only a part of the great discovery, for this Alaska wheat is both a winter and spring wheat, and when planted as either is a hard wheat that will grade as No. 1. Imagine a hard winter wheat for the great soft-wheat belts of the country which with the new wheat can compete with the hard-wheat lands of the great Northwest.

"California, where so much soft wheat is grown, is beginning to take up the Alaska wheat, for they see the opportunity of a hard-wheat yield. Farmers in Missouri and in the East and in the South, where soft wheat is all that can be raised with success, are beginning to think of what is in store for them when some neighbor convinces them, by making a first trial, that the wonderful Alaska wheat story is not so much a fabrication as the first story of seedless oranges was thought to be. The wheat world is trembling on the verge of a new era, one in which the man with a hundred acres suddenly finds his farm increased in area to a thousand acres by the discovery of one old farmer away out in Idaho."

Well, if "the wheat world is trembling," let it grab hold of something quick, so that money will not be shaken out of the wheat growers' pockets.

Of course, all this stuff about this winter and spring Alaska wheat growing in all the different wheat regions of the United States and yielding two hundred bushels of No. 1 hard to the acre is simply the preposterous fabrication of a faulty imagination. This wonderful wheat story is one of the kind we frequently see nowadays in the Sunday supplements of the big dailies, in sensational newspapers

and even in some of the better-class magazines. These fake stories are turned out by a busy brood of ill-informed space writers. Not all of them, however, are advertisements of novelties.

Now, as to Alaska wheat itself. The story says:

"In appearance the standing wheat is strong and vigorous, with a corn-like growth. Its head in the bearing part is about four inches long to over that, and an inch to an inch and a half broad at its broadest part. The kernel is about four times the size of hard wheat, and a clear, light cream color without a dark spot, as clean as hulled peanuts."

Accepting this description as approximately correct, there is not much difficulty in locating Alaska wheat. In answer to a request for information about it, Prof. W. S. Moore of the United States Department of Agriculture says:

"In the course of the investigations of this department on wheat we have not come in contact with this particular variety and know nothing about it. From specimens sent in and from what we can learn otherwise it appears to be a variety of the poulard group of wheats which is commonly known as Miracle or Sevenheaded wheat,

and has often been reported from the inter-mountain districts."

In other words, Alaska wheat is cousin german to "Corn-Wheat," made famous about six years ago by some wonderful stories sent out from the Far Northwest. Investigations showed that in certain localities in the inter-mountain region, where the climate and soil were unusually favorable to it, this odd variety produced large yields of fine quality. But practical tests with Corn-Wheat in South Dakota, Ohio and elsewhere, both in spring-wheat and winter-wheat belts, proved that it was absolutely worthless. In 1903 Prof. J. H. Shepard of the South Dakota Experiment Station, referring to the various names under which this curious wheat then masqueraded, said:

"From Idaho our elusive friend 'Corn-Wheat' is simply Polish wheat, or 'Triticum polonicum.' This variety of wheat is an odd-looking product, and is easily the king pin of all 'corn-wheats.' We have experimented with this grain now for three or four years."

"It is not a drought resister on our grounds. It succumbs easily to attacks of rust. It is the poorest yielder of all the wheats with which we are experimenting. For example, it gave a yield of seven bushels an acre of miserable shrunken grain, while macaroni wheat in a contiguous plot gave a yield of twenty-seven bushels of good grain."

"If it has any value anywhere, it is not in the Great Plains region. I am sorry to say, many farmers have been swindled with so-called Corn-Wheat, many to our knowledge having paid as high as ten cents a pound for it. . . . I wish again to emphasize the fact that Polish wheat is without value in conditions similar to ours, and consequently in the semi-arid wheat-growing regions."

An experiment made in Ohio in 1903 under my personal observation gave the same results stated by Professor Shepard. The coarse-growing, "corn-like" plants were severely attacked by rust, and the heads were badly affected by the scab, consequently there was a yield from a half-acre plot of less than four bushels of shrunken grain. In comparison with samples of grain and heads grown in Oregon, the Ohio product showed great deterioration. The accompanying cuts show a deteriorated head of "Corn-Wheat" grown in Ohio from Idaho seed, and grains from a magnificent sample sent from Oregon. I have no hesitation in saying that as a crop for the winter-wheat belt Alaska wheat, even if it does not turn out to be the same thing, will prove to be as big a fake as "Corn-Wheat."

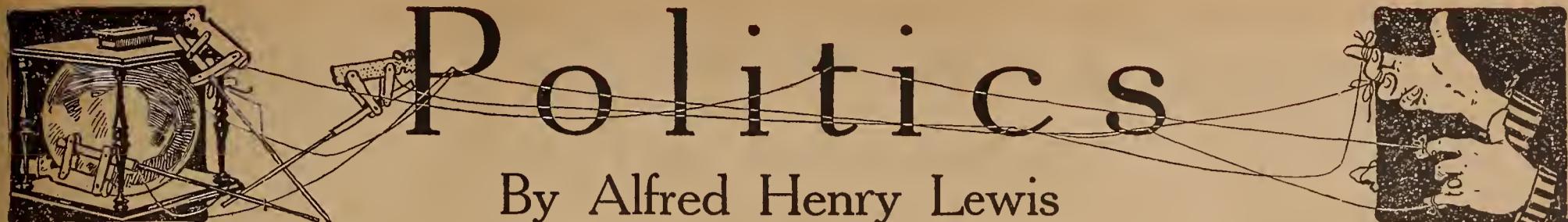
The moral of all this is not so much a warning against buying fake novelties as it is a warning to be on constant guard against such newspapers, magazines and even farm papers that carelessly publish such wonderfully wild stories and freely advertise such arrant humbugs. "Let the buyer beware" is an old adage; now let the reader beware whenever he picks up such utterly unreliable papers.



Deteriorated Head of Corn-Wheat
Grown in Ohio (Natural Size)



Grains of Corn-Wheat Grown in Oregon
(Natural Size)



Politics

By Alfred Henry Lewis

You will hear much of Tammany in the coming campaign, just as you have heard much of it in the past. It may not, therefore, come politically amiss to have the measure of that notorious organization.

In the caste-eaten days which came on the back of the Revolution, those who had been officers and worn a sword in that struggle organized themselves into the Cincinnati. The society was intended as an order of republican nobility. Since it is written in Nature that no force shall go unopposed, to the end that an equilibrium be maintained and the planets preserved in their places, no sooner was the Cincinnati abroad in the land than Tammany burst into being. The latter was invented by folk who had been the Revolution's private soldiers; and who—since they were of as proud a stomach as the officers, though in a more homespun, lowly way—aimed to create a counter organization to the high-flying Cincinnati.

Tammany had its birth in Pennsylvania, where it ran about and flourished in groundling fashion like a pumpkin vine among the corn. One Mooney, in 1789, brought Tammany to New York, and subsequently climbed thereby into local office, where he exhaustively looted the city, after the manner of Tammany even unto this day.

In the beginning politics with Tammany was an incident and not a purpose. It held its weekly meetings in the long room of Brom Martling's tavern, which stood at Spruce and Nassau streets on the present site of the Tribune Building, and its enemies called that long room "the pig sty." What cared the ruddelings of Tammany Hall? They quaffed their cider, sang their songs, told stories of adventures by flood and field, and at last attracted the wary eye of Aaron Burr. The latter was eager to provide himself with a following, and so he took the cider-drinking Tammanyites into politics, defeated Alexander Hamilton, and elected Jefferson president and himself vice-president with them. Given that first taste of politics, Tammany—until then amiable and benevolent—became at one a wolf of party. It has been a wolf of party ever since, though in these days frowzy of coat, gaunt and starved and lean of flank, broken of tooth—the weak and faltering shadow of its former ferocious self.

When Aaron Burr returned from Europe in 1812 he reassumed his leadership of Tammany. In that day Tammany was not without a vogue. Soon, however, the organization began to lose fashionable step. The New York right to vote or hold office was contingent on the ownership of real estate. Tammany struck fiercely at this real-estate condition.

"Better be ruled by a man without an estate," cried Burr, "than by an estate without a man!"

Tammany adopted the epigram as its battle shout. Also, it won the war; that real-estate qualification was beaten down. Tammany, Burr-directed, was the first to declare for General Jackson, and demanded him as president as early as 1815. Later it gave that war-battered demigod a dinner, and showed him the liberal glories of New York, which then possessed no fewer than one hundred thousand people.

* * *

Tammany has had bosses and bosses. Burr was a Tammany boss, Van Buren was a Tammany boss. Until 1860 it was a powerful, picturesque and not ignoble organization, to which a man might belong without losing his self-respect.

Under Tweed it became the lair of bandits, and was destroyed. Tweed's story has been told and retold, and part of it belongs with the crime record of the town. It was not until 1868 that he could write himself the dominant influence of Tammany Hall. Then his evils ran riot. Those were the unbridled days when he gave fifty thousand dollars to the poor; when his daughter's wedding cost seven hundred thousand dollars; when he built his "castle"—still standing, Norman battlements and ivied walls, on the north end of Manhattan overlooking the Hudson—and when the splendors of his American Club outgleamed the Orient. Also, it was then that destruction descended with the rush of a storm. Tweed was overborne, and died in his cage of Ludlow Jail.

Following Tweed, "Honest" John Kelly sought as leader to rear up an honest Tammany, on Tweed-rotten foundations. He only half succeeded; and, dying, was followed by Richard Croker, whose Tammany instinct ran in favor of victory rather than high repute.

* * *

With Croker, Tammany renewed itself as a power, and grew and expanded into the largest wolf pack that ever infested the political plains. It pulled down the town as wolves pull down the deer, and fed and growlingly fattened on it for sixteen years. Those were oily, unctuous, stomach-distending times, and the wolf litter of Tammany rolled and wallowed in graft.

While Tammany under Croker was no whit whiter than had been Tammany under Tweed, its methods of pillage underwent a change. In the franker hour of Tweed, Tammany thrust its arm to the elbow into the people's treasury and stole from the public direct. Under Croker, with the shadow of Tweed's fate lying all across them like a threat, the dingy folk of Tammany grew in caution and furtiveness. They pocketed just as many ill-smelling millions; but they had it from safer, if no more honest, sources, and came by it diagonally and in a different way.

When Croker—rich with forty millions of dollars—laid down his chiefship he was thinking only of his own release. One Nixon offered himself as a successor,

EDITOR'S NOTE—If you don't agree with Mr. Lewis, "talk back" to him, confining your reply to two hundred words. We shall hope to publish some of these replies from time to time.—THE EDITOR.

and Croker accepted him with closed eyes. Nixon became the gangplank by which Croker went ashore. It was like putting a dog in the top of a tree; Nixon failed and fell. Following him came a feeble triumvirate, laughed at and scoffed at during its brief existence. After the triumvirate appeared Murphy.

* * *

Murphy from his cradle days was a growth of Tammany Hall. As a boy he was combative, and fought his way to gang leadership by strength of fist. While still in his teens he organized a social-political club called the "Silvan," vulgarly spelled "Sylvan." The Silvan was one of those pleasant organizations that go on barge picnics up the river, and are met by the entire ambulance force of the city upon their return to the pier.

As a first method of livelihood Mr. Murphy acted as conductor on a cross-town car, a position which he laid down—so says that droll character Bill Devery—the day after the company adopted bell punches for registering fares. Being off the cars, Mr. Murphy opened a grogshop. It was the way he long'had sought, and mourned because he found it not. The grogshop, under the genius of Mr. Murphy, prospered. Mr. Murphy opened another, and still another. At last he had four. It was then—and naturally—he began to step forward and upward politically, and was made district leader of Tammany.

* * *

Murphy came legitimately to his leadership. Tammany in its elements is of the earth earthy; and because he was of the soil, the rank and file were of a feeling kindly and fellow with him. He was not too purely good—an important point with folk who are alive to the virtues of vice. Murphy is smooth of face, with manners quiet; his cunning is not so fine as a fox's. Neither is he a big man. To compare Murphy with Croker would be to compare a coffee mill with a Corliss engine, a badger with a bear, a billy goat with a buffalo bull.

Each of the district leaders—and there are thirty-six—owns a clubhouse, the property in many a district outtopping one hundred thousand dollars.

* * *

But Mr. Thomas F. Ryan, he of gas and traction, is the true head of Tammany Hall; Mr. Murphy is merely his place keeper.

Mr. Ryan is not, and will not be, in favor of Mr. Bryan. Tammany, to save its face, will walk through the campaign, slowly, gravely, as long-ago folk were wont to walk through a minuet. But it will carefully accomplish nothing. Were Tammany fighting for its life, it would pile up one hundred thousand majority below the Harlem River. Mr. Bryan will have rare good fortune if he "goes up to the bridge" with twenty thousand.

Tammany, as devoid of principle as a hyena, yearns only for power—power to be coined into pillage. It cares nothing for party. Tammany is for Tammany, not democracy. It has no hopes of national sort. Likewise, it is well aware that it is nationally despised as a mere robbers' roost.

Still, Tammany, however vicious, is but as so much justice done upon that public over which it rides. The public is everywhere the open-eyed architect of its own destinies—its own joys, its own despairs. There could be no Tammany, no Murphy, no Ryan, wanting the New York public's consent. And those who keep monkeys should pay for the glasses they break.

* * *

Speaking of Tammany, the secret of its strength is this: These are the locks of our Samson. While Tammany is a political organization one day in the year—election day—it is a fraternal-benevolent society the remaining three hundred and sixty-four. The "leaders" find work for idle ones who need it. They pay the fines of petty malefactors laid law-wise by the leg. Thousands owe the coats on their backs, as well as the foot freedom they enjoy, to the charitable interference of Tammany Hall. Gratitude is a commonest trait, and these poor folk are grateful. Why not? Would any man desire them otherwise?

It is in this very Christian particular of "First Aid to the Poor and Helpless" that the so-called "better element" is weak. The good people of politics leave all that to Tammany Hall. The good people are through, thoroughly through, with the mere voter when the polls are closed. In brief, the good people assert themselves but one day in the year, while Tammany, the indefatigable—indeed, the Machine wherever found—fighting its enemies and upholding its friends, makes itself felt, and known, and feared, and loved the whole year round.

* * *

This tale, told me by President Roosevelt, should show what I mean. Back in the middle eighties, when Mr. Roosevelt was in the legislature, he raised the standard of revolt against the bosses. Among honest men who followed him was Peter Kelly, a democrat of Brooklyn. This was in a day when Willoughby

Street and Boss McLaughlin ruled Brooklyn, and honesty was punished with death.

Peter Kelly, at the end of his term, was politically destroyed. Willoughby Street went even farther, and when Peter Kelly sought to practise law, no clients would come to him. No man dared bring him so much as a ten-dollar fee while he lay beneath the frown of Willoughby Street.

Days ran into weeks and weeks into months, and times went worse and worse with Peter Kelly. Then he fell ill; for it broke his heart to see his wife and children starve. A priest wrote the first word of it to Mr. Roosevelt. The note ran:

"Your friend Peter Kelly is sick, and on New-Year's Day he and his little ones are to be turned out of their house."

Mr. Roosevelt—he was not rich—sent five hundred dollars. Then he came to see Peter Kelly, who was very low.

The Reform forces had just won the fight for the mayoralty of Brooklyn, and planned a virtuous celebration. Mr. Roosevelt was asked to make the principal oration at this festival.

The white new reform mayor and the rest were there. Mr. Roosevelt began to speak. He told them of Peter Kelly—his illness, and their neglect of him. They had left him to be slaughtered by the boss who—in for their interest—he had defied. He was a man of courage, of purity, of brains; he had lost all, and what had they done for him? Mr. Roosevelt criticized, he did not congratulate; he told them of their callous ingratitude to Peter Kelly, and sent the words home like javelins.

The gentlemen of reform became conscience stricken. The white new mayor arose, and said that on the morrow he himself would give Peter Kelly a place in the law department of the town.

The new mayor was a faithful soul, and did his best, as was evidenced by the note Mr. Roosevelt received from him next day. It said:

"Peter Kelly died last night at half-past eight o'clock."

While Mr. Roosevelt was telling his story, Peter Kelly was dying; he was in his shroud and coffin when the mayor's offer of an office arrived.

* * *

From a young man comes a letter which he would not have written had he been sixty years instead of twenty. In the former case he would have known the answer to the question he asks. He wants to know "Who was Mr. Taft's father, and was the father great?"

Judge Alfonso Taft, father of candidate Taft was—as his old Cincinnati neighbors will tell you—a bigger man than any of his boys. I speak this the more freely since the same might be, and indeed has been, said of my own father. Judge Taft was a rock-rooted abolitionist. He belonged to those iron days which preceded, included and immediately followed civil war.

It was an hour prolific of great men; the national woods were full of them. For which reason it may be that the elder Taft did not stand out as he would have done had he lived in these more piping times. He was a lawyer and a judge, and a party thunderbolt, besides. Also, he held high office, being variously Minister to St. Petersburg and to Vienna, and serving besides as Attorney General and Secretary of War in the cabinets of President Grant.

Envious ones have pointed out, to be sure, that as cabinet officer he did not shine, and as minister in no wise shook his times. That, however, was a fault not of the man, but of the place. What cabinet star may hope to be seen while a White House sun is in the heavens? As for your ministers, importance is impossible, and has been ever since steam and telegraphs were factors in the life equations of men and nations.

In the old days a minister was half hostage, half spy, and such trinketry of government may then have had its turn and served it. In our own time, when ambassadors and ministers belong only with the ragtag and bobtail of a tinsel past, they have no actual purpose and accomplish nothing. These posts are now preserved merely as a means of filling the treasure chests of party. They become the reason of campaign contributions. Sons of inherited money, and quick-rich vulgarians, purchase them of the parties, just as a rich peacock would purchase a tail, had he been hatched without one. Having bought them, our rich weaklings strut with them peacockwise.

And after all, since they, the peacocks, harm no one, it is perhaps undeserving of complaint. Such places go with present government, much as goes the red-coat monkey with a street organ, and while impressive to party as filling its strong box, in no wise contribute to the public music that is ground. Were they wiped out, nothing would suffer save party; no one who was not a politician would be hurt.

Who of us has ever heard of any worth-while thing accomplished by a foreign minister? When aught of moment is afoot, the nations invariably act upon the maxim of Cromwell, who declared that "a battleship is ever your best ambassador."

For myself, I have heard of an ambassador but once, and that was a few weeks ago, when the papers reported one Charlemagne Tower—for America at Berlin—as shedding bitter tears because he was called home. He declared, too, between sobs, that he should "retire forever from politics." Whether or no the last was simple hopelessness, or intended as a threat, I cannot say. I am sure, however, that the world will hold its course unshaken, though Tower of the medieval name carry out his mighty resolution.

A Snap-shot at Fate

By Izola Forrester

"POLLY, don't run. I simply can't rush another step, not if we lose the train."

Polly Porter laughed breathlessly, but only hurried faster than ever through the crowded station toward the concourse of waiting trains.

"We've only got a minute and a half," she called back over her shoulder.

"Where's the suit case?" wailed Dora suddenly, stopping short at the revolving doors. Instantly the person behind her, who had been rushing at the same break-neck pace, was nearly thrown backward by her move, and bumped vigorously into the glass sides.

"Oh, I'm so sorry," gasped Dora, catching a fleeting glimpse of a gray cravat, and gray crush hat pulled down over a pair of masculine eyes that actually glared down at her.

"Not at all," retorted the other savagely, tearing himself loose, and vanishing down the thronged platform. Polly had also disappeared, but after a frantic glance around, Miss Porter, the elder, caught sight of a familiar hat, and knew that Polly's merry tanned face was beneath.

"Did you see that man with the gray coat?" she asked.

"All aboard!" shouted the gateman, gently moving the dilatory Dora beyond the closing gates. Ahead strode a red-capped colored porter bearing a couple of suit cases. Polly did not even pause to answer, but ran at the heels of the porter, until he handed her up to the parlor-car platform.

"Well, thank goodness, we made it, anyway," she exclaimed, sinking back in a chair, as the train moved out of the station; but Dora's gaze rested fixedly on the suit case.

"Polly, that doesn't belong to us!" she exclaimed.

Polly took in the general size and character of the suit case at a glance, and for once the happiness died out of her pretty, flushed face. It certainly was not their suit case. Didn't she know every scar and defacement on the beloved old battered partner of their summer jaunts? This was the same type, but it was a newer, less-experienced traveler, and in one corner were two brass initials, J. A.

"Open it," said Dora. "It's the only way we'll find out to whom it belongs."

So, after a cautious glance about, Polly opened it, and bending over its contents that were so palpably, brazenly masculine, the two girls laughed in spite of their own loss. A pigskin case containing ebony military hair brushes, comb, and shaving set; a large box of carefully wrapped, patent, highly colored minnows, a sweater, pajamas, some magazines, a worn felt hat, and three pipes, assorted sizes; also, a folding kodak, and a neatly banded package of unmounted proofs. Polly reached for these last instinctively.

"Maybe his picture is with these," she said. Dora smiled, and opened the top of the pigskin case. Burnt into the leather was the name, Jack Allison.

"It's certain to be advertised for." Polly ran over the kodak pictures rapidly. They were all of camp life, with huge fishes hung up on forked limbs as trophies, and various views of the camp itself. On the back of one was written "Camp Fortune."

"I like the looks of said camp immensely," laughed Polly, "but where on the face of this old twirling world of ours is it situated? Dora, you're well up on forestry. Where do those trees grow?"

"You might just as well ask me where those fishes grow," Dora returned, but stopped short at sight of one of the snapshots. It was a picture of the man who had collided with her at the revolving door back in the station—long, loose cravat, soft crush hat, eye glasses, and all. "Polly," she exclaimed, "look at this! That's the very man I nearly tripped up when we were running for the train. The porter must have been carrying his suit case, too, and got it mixed up with ours."

"Then he must be on this train—" Polly checked herself. Pacing leisurely toward them along the aisle of the car was a young man, minus the cravat, but surveying the occupants of the car deliberately through rimless eye glasses. Dora managed to shut the suit case hastily, and both girls sat back in their chairs, absorbed in the landscape out the windows. But it was useless, this attempt to postpone the fateful hour. Directly in front of their seats he stopped, referred to something he carried in his hand, and then stared down at Polly. Polly took one swift upward glance, saw that he held

her own smiling countenance on card-board, and blushed hotly.

"Pardon me," he began cheerfully. "I don't think I have made a mistake. Isn't this your photograph?"

Polly bowed her head in dignified silence.

"I found it in a suit case left with me by mistake when the train started," the stranger continued. "You have mine here, I think. If you will just allow me to make the change—"

Five minutes later the old, friendly suit case was in its rightful place, and the two travelers looked into each other's eyes ruefully.

"He must have opened this, and looked through it, just the same way we were doing to his," said Dora mirthfully. "Polly, he saw your pink kimono on top, and the—"

"I don't care what he saw," retorted Polly haughtily. "He doesn't interest me." She opened a book, and pretended to read. Dora pursed up her lips musingly, and made a calm but thorough inspection of the suit case.

Presently she announced with emphasis, "He has kept your picture, Polly."

"I don't care if he has," retorted Miss Porter, the color rising in her cheeks. "I hope we'll never see him again."

But when the train pulled into Big Indian Station, they caught a glimpse of the gray-clad figure and the now-familiar suit case at the front end of the little platform. One of the rickety carryalls backed up to the platform bore the name across its top, "Ariunda Villa," and the two girls hurried to it. Just as it started away, the gray-clad form of Jack Allison swung leisurely up beside the old driver.

Three weeks later the elder Miss Porter sat on the broad veranda of "The Ariunda Villa," with a photograph-mounting outfit beside her—paste pot, gray mats, trimming

"I'll ask him." Polly's tone was short and sweet. She sat up from the hammock pillows, and tried to smooth her tousled hair, as Jack Allison swung up over the end of the veranda railing, and came toward her. Dora had gone.

Steadfastly she regarded the top of Big Indian, and gave no sign that she was even aware of the presence near her.

Finally Mr. Allison said gloomily, "Well?"

"Yes," she returned, and Allison laughed.

"It's so perfectly idiotic for you and me to be like this, you know. You haven't spoken to me for three days—"

"I had good reason," interposed Miss Porter coldly.

"Because I said I meant to keep your picture?"

"It is my picture. You had no right to it."

"I have," he retorted. "Didn't I find it in that blessed suit case, and fall head over heels in love with it, and then set out to find the original? How would I ever have found out who the suit case belonged to if that had not been there?"

"We would have returned yours. We had no intention of keeping that assortment of fishing tackle and pipes."

Jack's blue eyes twinkled.

"Then you took a look through the table of contents, too?"

She flushed, but stood her ground.

"It was necessary in order to find the owner."

"Polly." There was no answer. After a pause he tried again. "Polly, do you believe in fate?"

Polly nodded, ever so slightly, yet it certainly was a sign of acquiescence.

"Then listen. Didn't we two meet just on the chance of a moment there in that depot? And wasn't it fate that led that

"I'll never tell him I kept it," whispered Polly. "Never."

Downstairs, on the veranda, Allison lay back in the hammock, thinking deeply. He had told Polly it was fate, their meeting, and his conscience smote him. Could he tell how that day in the station, when Dora had nearly upset him, he had caught a glimpse of Polly's face, girlish, buoyant, eager, and had followed its call without thought? He had swung his suit case over to the porter who bore theirs on purpose. A dollar bill went with it, and the darky had grinned like an ebon sympathetic cupid, and said, "Big Indian, Catskills, sah."

And as to the exchange of suit cases—well, his conscience was fairly clear on that score, but was the darky's?

"I don't care," he ejaculated. "All's fair, anyway. I'll never tell her. It was fate, and we'll spend the honeymoon up in these dear old hills, God willing."

He leaned out under the stars to look up at her window; but the light was out, and he couldn't see her, kneeling there, with her cheek pressed to the little kodak picture.

Just Jokes

The Reason Why

"AND how are the tomatoes coming on?" asked Mr. Younghusband of his little wife.

"Well, dear," began the lady nervously, "I'm rather afraid we shall have to buy them, after all."

Mr. Younghusband frowned.

"But, my dear Maria," he expostulated, "I distinctly understood from you a couple of months or so ago that you had planted a whole row!"

"That's quite right, dear," explained Maria, "but I've just remembered that I forgot to open the tins!"—Answers.

Looking After the Baby

"YES, our little four-year-old is such a comfort and such a help to me," said Mrs. Mosman to a lady caller. "Why, he can take care of his baby sister as well as any nurse. He is in the next room now, playing with little Dorothy." (Raises her voice): "Walter!"

"Yeth, mama."

"Are you taking care of little sister?"

"Yeth, mama."

"What are you doing?"

"Oh, I's des playin' I's a barber, an' I's shavin' her wif papa's razor." (Excited tableau.)—Pick-Me-Up.

She Knew the Place

THE elderly matron with the bundles, who was journeying to a point in Wisconsin, and occupied a seat near the middle of the car, had fallen asleep. On the seat in front of her sat a little boy. The brakeman opened the door of the car and called out the name of the station the train was approaching. The elderly woman roused herself with a jerk.

"Where are we, Bobby?" she asked. "I don't know, grandma," answered the little boy.

"Didn't the brakeman say something just now?"

"No. He just stuck his head inside the door and sneezed."

"Help me with these things, Bobby!" she exclaimed hurriedly. "This is Oshkosh. It's where we get off."—Youth's Companion.

Everything in Proportion

FOR many weeks the irritable merchant had been riveted to his bed by typhoid fever. Now he was convalescing. He clamored for something to eat, declaring that he was starving.

"To-morrow you may have something to eat," promised the doctor. The merchant realized that there would be a restraint to his appetite; yet he saw, in vision, a modest, steaming meal placed at his bedside.

"Here is your dinner," said the nurse next day, as she gave the glowering patient a spoonful of tapioca pudding, "and the doctor emphasizes that everything else you do must be in the same proportion."

Two hours later the nurse heard a frantic call from the bedchamber.

"Nurse," breathed the man heavily, "I want to do some reading; bring me a postage stamp."—Harper's Weekly.

"Pardon me," he began. "Isn't this your photograph?"

scissors and all. It was just past sunset, and over the mountains wreaths of mist, faint as bridal veils and as delicately beautiful, were settling around the wooded slopes of Big Indian Mountain. The sky was still pink with the afterglow, and some of its rose color seemed reflected in the face of Polly as she leaned back in the hammock, her arms clasped above her rumpled brown curls dreamily.

"There," exclaimed Dora, giving a final pressure to the last card, "I'm glad that's done! You can pack them as soon as they're dry to-night, Polly."

"All right," Polly returned, without looking away from the spot where Big Indian seemed to touch the sky.

"You're not sorry to leave here, are you, dear?"

"Sorry?" At the touch of solicitude in her sister's voice, Polly laughed. "Indeed, I'm not a bit sorry."

Still Dora hesitated as she rose to go upstairs.

"Don't you think you had better ask Mr. Allison to return that picture of you?"

blessed porter to make a mistake in the suit cases? And listen. Wasn't it one chance in a hundred my coming to the same place, way up in these old mountains, where I was to see you every day, and grow to love you more and more, until I've made up my mind that you and I, Polly, are never going away from them until you have promised to be my wife?"

"I am going home in the morning," said Polly recklessly.

"No, you're not. You can't, because it's fate, and it's no use fighting, sweetheart, not one bit, against fate; is it?"

And looking up into his eyes, slowly, reluctantly, Polly shook her head and capitulated with honors. It was no use. She had known it for some time.

Late that night Polly, standing alone in the moonlight in her own room, held a kodak picture close to her cheek, and laughed softly to herself. It was the one of Jack Allison that Dora had found in the suit case, and hidden in Polly's book that day on the train, it had escaped notice.

Handy Helps

A Home-Made Knife Sharpener

A HANDY thing to have in the kitchen is a knife sharpener. The one illustrated below can be very easily made as follows:

Get a piece of wood ten inches long and three inches wide, six tacks and one sheet of No. 0 emery paper. Cut the paper in



three pieces lengthwise, and turn over the ends of the board, tacking it there, to hold securely.

By drawing over this little board a few times, any blade, from a carver to the smallest pocket knife, may be given a good sharp cutting edge.

When a layer of paper has lost its usefulness, slice it off with your knife, and there is another ready for use. When all are used, buy a new sheet of paper and tack on as before.

To Weave a Cane Seat

IT is worth while to know how to seat chairs with cane, and it is a great saving of expense. In most country households there is frequently a chair in need of a new seat, and to have it repaired one must often go to the trouble and expense of expressing it to the city. The cost of having the chair reseated with rattan is seldom less than seventy-five cents, often more. To be sure, cheap wooden or leather seats may be obtained, and these are easily put in place with brass-headed nails, but they are never as satisfactory as the cane seats, nor are they as comfortable.

It is possible to make seats for one's own chairs at a cost of about twenty cents a chair. Procure a bunch of the medium-sized rattan (price about seventy cents) from any large furniture warehouse. If the chairs are not large, one bunch is sufficient to seat four chairs.



The first thing to do is to remove the old seat. This is easily done by cutting around in the last row of holes, near the inside edge of the chair. Then remove all the pieces from the holes.

A round seat is a little more difficult to do than one with square corners, therefore it is best to try one of the latter kind first.

Take hold of one of the loops at the top of the bunch of cane and draw out one strip. Dip this in warm water for a moment, to make it pliable. Have several wooden meat skewers to hold the strands in place as you work.

The weaving is done in six rows. Examine the old seat carefully before removing it, and look at any cane-seated chair as you work—one like the chair you are working upon would of course be preferable.

First row—Count the number of holes at the back and front of the chair. Most chairs are wider in the front. The strands must go straight across. There will be a few holes on each end of the front row from which the strand goes to some hole on the side. Cut one end of the cane diagonally, to make a point, then put it down through the end hole at the back, leaving about two inches on the under side. Put a skewer in the hole to hold this. A little later it may be fastened. Bring the strand across to the front, put it in the opposite hole (sticking in a skewer to keep it from slipping back), and put it up through the next hole. This leaves a stitch on the under side. Continue until the cane is used, then fasten by putting the end several times under the nearest of the stitches and cutting off. At first you may find it necessary to look at the under side when fastening, but you will soon get accustomed to the work, so that the sense of touch will be sufficient.

Second row—Weave across from side to side, weaving in and out of the strands of the first row like a darning stitch.

Third row—Weave from front to back, making an over stitch come next to an under one.

Fourth row—Weave again from side to side. In this row, possibly in the third, you will find it easier to work with shorter pieces. Cut-off enough to go across two or three times.

Fifth row—This row goes across the seat diagonally. Begin at the two holes either side of a corner. Here will be an opportunity to use up small pieces if you have any. Work over two strands, then

under two. You will have no trouble in doing this if you will look at a cane-seated chair while you work.

Sixth row—Work across diagonally, the opposite of fifth row. The cane will of course pass over three strands this time. Have the over stitches and under in a straight row across the chair.

The next thing is to put the finishing strand along the edge. Wooden pegs about an inch long are sometimes driven in every other hole. These may be whittled from a stick. Take a piece of cane a little longer than the front of the seat. Put one end in the corner hole. Then use another and longer piece to work with, passing it up through a hole, over the first piece, back through the same hole. Do this in every hole unless you have driven pegs; in that case, in every other hole. Drive in a peg at each corner as you come to it, having the cane that is laid along the edge put over the peg before the latter is pounded in. No pegs should be visible when the work is completed. Then turn the chair over and tuck in the ends that are left, and cut off any that are well fastened.

One ought to be careful in working not to have the cane too wet or too dry. If too wet it will stick and will not draw through readily; if too dry it will twist.

If the seat is removable, as in some chairs, the work is more easily done. See if there are screw holes underneath. If so, the seat can be removed unless it is fastened through the back leg.

The position of the chair when working should be as convenient as possible. If the chair is on the floor, and one sits in a chair of the same height, one's back will soon ache from leaning over. The easiest way to manage is to sit in a low chair and rest the back legs of the chair that is being seated upon a sofa, so that the seat is in a slanting position.

It will be easier to seat the second chair than the first, since a great many points will be gained from experience.

Table-Linen Economy

I HAVE found that there is no economy in buying a poor quality of table linen. The cheaper qualities become rough after the first laundering and soon fall into holes, while good linen will improve in appearance after it has been washed a few times, and retains its smoothness and beauty until it is worn very thin. It is also economy to buy the standard patterns. Among the best of the standard patterns are the delicate snowdrop, the clover design, the inch-square block and the fern leaf.

Use good soap and soft water in washing, if possible, since the lime in hard water is likely to rot linen. When putting through the wringer, be careful not to have the wringer screwed up too tightly, since it may break the fibers of the material. If the day is windy, let it remain on the line only long enough to dry. The flapping in the wind will wear it out more than several weeks of use. It is also poor economy to let it freeze on the line, as the fibers are pretty sure to become cracked. When table linen begins to wear thin in spots it is well to darn it neatly on the under side before it begins to break. When it has become too thin to use on the table, cut it up and use the best part for everyday napkins, hemming neatly. Double the thin parts in several ply, and quilt on the machine. These will make nice dish towels.

A Simple Medicine Dial

BY USING the method here described, mistakes in the time for giving medicine are avoided, and the memory is relieved of all care and anxiety. Cut a circle of cardboard large enough to extend over the edge of a tumbler. Mark the disk to imitate the hours on the face of a clock (half and quarter hours may also be used), and cut notches all around opposite the hour marks. Tie a knot in a cord, pass it up through the center of the disk, and attach a heavy ring or button to the other end. If medicine was given at eight o'clock, for instance, and should be given again in an hour, move the cord to nine, etc.



Fourth row—This row goes across the seat diagonally. Begin at the two holes either side of a corner. Here will be an opportunity to use up small pieces if you have any. Work over two strands, then

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Our Young Folks' Department



Some of the Prize Stories

A Day in the Autumn Woods

BY LELAN STEWART

MY HAPPIEST day? Let me think a moment. Ah, I have it now! It was one Saturday last fall. On this long-to-be-remembered day I woke early, but found others had been earlier than I, for the delicious odor of coffee came floating up to my room, and I could hear the men as they hastened about doing the chores.

In an incredibly short time I was dressed, and hastening downstairs, found breakfast almost ready. When that was over, and the men had gone to work, mama made ready for a visit to her sister, who was quite ill.

As the men would not be home for dinner, the coast was indeed clear. I went to work with a will, and soon had the dishes done, the kitchen tidied and the beds made and a pan of fudge bubbling on the range. Then I sat down at the piano for my usual hour of practise.

After practising, I took my painting materials and my lunch basket and started for the woods, about a mile distant. The walk was delightful and the crisp, yet warm air most invigorating. The road was banked on either side by the loveliest of purple asters, and these intermingled with the long, feathery plumes of the goldenrod made a sight worth beholding, and also furnished material for a lovely sketch. At length I reached the woods, and when I beheld the two large maples at its entrance I felt certain that "Solomon in all his glory was not arrayed like one of these."

As to the enjoyments found there in the woods I shall leave you to guess, for the crisp air enticed me on and on, and each step disclosed new beauties. If I were to tell you of the wonderful things I saw you might think I had been asleep and dreaming of fairyland, so I refuse to say any more on the subject, only next October go and see for yourself.

When I reached home, mama was getting supper, so I helped her while I told her of the happy, happy time I had had. We spent the evening playing "flinch" and at bedtime I fell asleep dreaming of the big, fat, cheery cricket that had sung for me while I ate my lunch.

A Fair Day

BY MINNIE STOUT

THE sixteenth of April had come at last, the day of the great fair we had all been planning for. I was up and dressed before any of the others had risen. I was as excited as could be, for was not to-day the time when it would be decided who should win the great big doll? And was not I a contestant? I had made the very best cake I could, and it had already been handed to the judges. There were many others trying for the prize, and mother had said I must be very careful.

After breakfast Joe, our hired man, hitched the horses to the big carryall and we were on our way to the fair.

The prizes were to be given at ten o'clock. Until then we watched the foot races and other games. We then went and heard the prize winners announced. My heart almost stood still. The judges were looking at me now, and I heard my name called. I stepped forward and the doll was mine. I was so very happy.

After dinner we visited the animals and looked at the fruit and vegetables. We then had a row on the lake.

That night, as I went to bed, I thought I had had a very happy day.

How Frank Earned His Happy Day

BY FRANK WARMANN

MY BROTHER, who is eleven years old, and myself, thirteen, wanted a bicycle very badly. Living near the city of St. Louis, where there are fine roads and parks, we thought we would enjoy nothing better than a bicycle spin. We asked our father to get us a wheel. He answered that he would give us a piece of ground and what we could make out of it would be our own.

Then what planning to decide which would be the most profitable crop! We decided on Red Globe onions (this was in January). Then we went to work early in spring to lay our hotbed and sow our seed. We planted the plants on our own ground and worked and hoed all spring. Early in the summer we got our crop ready for market. We harvested twenty bushels, and sold them at ninety cents a bushel, which gave us nine dollars each.

Then we went to a second-hand bicycle shop and each bought a fine bicycle for ten dollars (having saved up a few dollars besides the nine). When we came home riding down the road on our own bicycles, that was our very happiest day.

How Tramp Was Adopted

By Izola Forrester

TRAMP was feeling very unhappy and lonesome that morning. All by himself he sat on the steps of the bathing pavilion at Battery Park, and wondered if there wasn't anybody at all in the whole world who cared about a homeless dog.

"Whose dog is that?" he had heard the policeman say the day before, as he strolled around and found Tramp resting on the steps that led to the bathing pools. Tramp looked wistfully around. There were a lot of boys waiting their turn at the free baths, but not one seemed a bit interested in the fate of a dog.

"Oh, he's just a tramp," one of the men said. "He came a few days ago. Maybe he belongs to one of the boys around here."

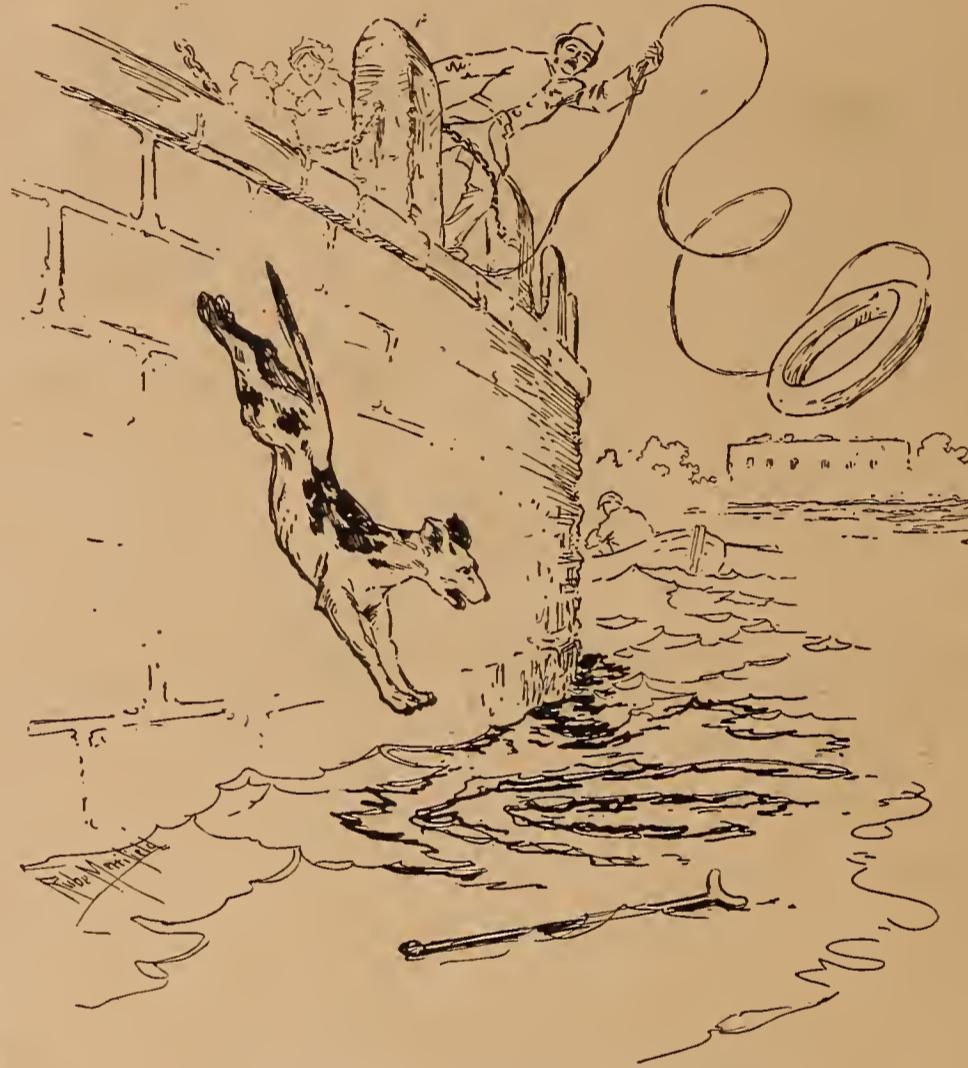
So after that everybody called him Tramp, and at noon time, if he happened to think of it, the man who taught

parts of the park, and the policeman had a big round life preserver ready to throw out, when Tramp heard a man say:

"It's no use. He didn't even come up. He can't swim. He's lame."

Didn't even come up. That was all Tramp understood, but he wondered why all those people could stand around and stare at the swiftly rushing water when there was a boy under it somewhere. And he let out a sharp bark and leaped down into the water just to show them the right way to act.

"The dog's gone after him!" shouted everybody; but Tramp had dived far under the surface, and didn't hear them. Strongly and bravely he breasted the current, and paddled with might and main until he saw through the dim green half light a dark shadow. One good tug, and he had a firm grip on it with his teeth,



"The dog's gone after him! shouted everybody"

the boys how to swim would throw him a bite to eat. And Tramp almost felt as if he had found a home, after the long, hot days of wandering through the city streets, and being chased and kicked everywhere.

But after a week the policeman said if nobody claimed him by Saturday he would have to take him away. Tramp knew very well what that meant. They would catch him and throw him in a wagon, and that would be the end of all life and fun for him.

Saturday was the busy day at the free baths. The children started coming early in the morning, and splashed about in the swimming pools until it was twilight.

"Never mind, old boy," said the man in charge, as he stopped to pat Tramp's head. "Maybe your boss will show up to-day."

But Tramp knew no one would ever come for him. He was just nobody's dog, and his ears drooped mournfully, and his big brown eyes looked wistfully at all the children. It certainly did seem that there might be one in the lot who really wanted a whole dog all his own.

All at once Tramp heard the strangest sort of a noise. Somebody screamed, a high-pitched scream of terror, then other children began to cry out, and the men were running here and there. So Tramp ran, too. It wasn't in the swimming baths, but outside, that the trouble lay. Only a minute before Tramp had seen one of the boys sitting up on the stone pillar, and wondered why he didn't go in and have some fun, too. Then all at once he had noticed a wooden crutch that stood beside him, and even though he was a dog, Tramp knew why this boy didn't go with the rest for a swim.

Just how it happened nobody seemed to know, but people were rushing from all

and then back, up, up to the fresh air. Somebody had launched a boat, and Tramp struggled to hold out until quick, eager hands relieved him of his burden. Then he, too, scrambled into the boat, with a friendly grip on the back of his neck to help.

And then the most wonderful thing happened. While they were bringing the lame boy back to life, Tramp was petted, and praised, and patted until he barked from sheer joy over it all.

"Good boy, sir," said the big policeman, giving his cocked ear an admiring tug. "You're a real hero." Then he asked the lame boy, as they lifted him into the ambulance to take him home, "Is this your dog, sonny?"

"Well, he isn't, really, sir," said the boy, "but I wish he were."

"Take him along, then," laughed the policeman, and he lifted Tramp up into the wagon, and Tramp knew, as he snuggled down against the wet little coat of his new master, that he would never be a homeless tramp again.

Staying Up Late

One evening, when my bedtime came, I didn't want to go, So mother said I might stay up For just this once, you know.

And so I stayed and stayed and stayed, Through all the night, I think, And never went to bed at all Nor slept a little wink.

But when at last the sun arose, A-shining warm and red, I found I had my nighty on, And was sitting up in bed.

—St. Nicholas.

Cousin Sally's Letter

DEAR BOYS AND GIRLS:

One of my girls wrote me the other day and asked if it didn't make my head buzz to have so many new cousins all at once. I must admit that it was a great surprise to find that there were so many of you, but it was the kind of a surprise you have on Christmas morning when you wake up and find your stocking full to overflowing. The happiest kind of shock!

I have told you before how very much I enjoyed receiving your enthusiastic letters. I have tried to answer them separately, but have not yet been able to write to all of you. I want to thank the following boys and girls for writing, and assure them that although I haven't had time to write to each one, their interesting letters have given me very great pleasure:

Zora Smith, Cecilia Halmeyer, Lillian F. Merkey, Lulah Kuhn, Virginia Clore, Sylvia Eckart, Marian F. Wallace, Harriet M. Blanchard, Minnie Skinner, Louise Johnson, Swannie Daly, Katie Tyson, Leah Jackson, Annie Rister, Freda M. Lang, Nellie Rister, Violet Maybright, Agnes Orr, Marion O'Brien, Leelah Eberhart, Sarah J. Launt, Pearl Hayhurst, Pearl Hardenbrook, Leah G. Fraser, Mary J. Burney, Raymond H. Wilbut, Loretta Berres, Mabel Calvin, Gwen Godbey and Louise Miller.

The reason that some of you have received no answers is because you failed to tell me where you lived. Even some of the stories submitted for the prize contest had no addresses of the writers. Dear boys and girls, this is a little carelessness which you can so easily remedy, and which, if not remedied, may keep you some time from receiving a prize.

Let me hear from all of you soon.

Affectionately,

Cousin SALLY.

Winners in the Story Contest

Lelan Stewart, age fifteen, Lilly Chapel, Ohio. Frank Warmann, age thirteen, St. Louis, Missouri. Minnie Stout, age thirteen, Meridian, Mississippi. Stewart Cotter, age nine, Sabula, Iowa. Lulu Whitewell, age fourteen, Hennepin, Illinois. Edna May Keating, age thirteen, Easton, Pennsylvania.

The Letter Box

DEAR COUSIN SALLY:—I received your last letter a short time ago, and was just delighted to hear from you. I intend to take part in all the prize contests, and I hope I shall be a prize winner each time. I have read "The King of the Golden River," and I like it very much. I am cutting out most of the little stories published in FARM AND FIRESIDE, and saving them. I liked the story "The Little Tenderfoot." In one issue Esther O'Brien said she would send you some pioneer stories if you wished her to. I do wish she would, for I would like to read some of them in our own little "corner," as I love stories of pioneer life.

Affectionately,

HAZEL WOOD,
New Carlisle, Indiana.

DEAR COUSIN SALLY:—I am so glad that I have a new cousin. I am going to write to you as I would to one of my "real" cousins who are too far away for me to see very often.

I think the Young Folks' "corner" grows better and more interesting every year. I like to read the letters and good little stories I find published there, written by the "young folks" themselves. I hardly dare hope that anything of mine will ever be published there, though I am venturing to send some verses. However, I hope you will print a few of them. I composed them myself. I am just fourteen years old, and love to go to school. It is my wish that I go to college soon, for I want to be a schoolteacher.

Ever your loving cousin,

LILLIAN S. DRAKE,

Saltillo, Pennsylvania.

Below are three of the verses from the little poem that Lillian Drake has written.

Daisies

Daisies in the meadow,
Daisies in the grass,
Daisies by the roadside
Everywhere I pass.

Daisies lift their white-frilled heads
To kiss and greet the sun;
Daisies bright and pleasant still
When the day is done.

I will miss you, little daisies,
When you pass away;
You bring me joy and gladness
Every fleeting day.

Mrs. Warren's Conversion

By Louise J. Starkweather

"NELLIE, oh, Nellie!" Jack Warren's long legs had carried him, two steps at a time, across the porch, through the hall and up the front stairs to the sewing room where he knew he would find his wife.

"News for you, little girl," he said, dropping a kiss on the brown hair. "Guess who's back for a visit?"

"Oh, I'm sure I haven't the slightest idea."

Mrs. Warren lifted her eyes for one brief second to her husband's face; then they fell again to the work in her hand.

"I'll give you three guesses." As he spoke Mr. Warren started to sit down, but with a little scream his wife jumped toward the chair.

"Oh, don't you see! You're crushing the sleeves!"

"Sleeves!" Jack Warren was eyeing contemptuously the bits of lace and lawn that his wife was holding up for his inspection. "They're just pieces of nonsense."

"But Eleanor looks like a little fairy in the dress."

The woman's tired eyes brightened with delight as she saw in her mind's eye her lovely little daughter, made even lovelier by the dainty white gown.

"Oh, I've no doubt—but—" a little frown puckered the man's forehead and his eyes looked earnestly into those of his wife, "you know I don't approve of you sitting here day after day doing it—"

"Yes, I know." Mrs. Warren had reseated herself and had taken up her sewing again. "Yes, I know—but of course a man can't be expected to understand the pride a woman takes in making dainty things for her daughter."

"Well, perhaps not. In the meantime why don't you make a try at guessing the news I have for you?"

Mrs. Warren only shook her head.

"Well, then, Clara Spence, her husband and little girl are home for a visit."

"Clara Spence home for a visit!" The woman dropped her work in her lap and looked at her husband with the full measure of surprise that he expected.

"Yes, I knew you'd be interested, and I wondered if you wouldn't like to go over this evening for a little call."

"Of course I would," Mrs. Warren replied enthusiastically. Then her eyes fell on the white dress. "Oh, I'd forgotten about Eleanor's dress. The party is tomorrow afternoon."

"And I suppose," there was just a hint of sarcasm in the man's voice, "I suppose the dear child hasn't another thing she could possibly wear."

"No, she really hasn't. I suppose you are thinking of the embroidered linen that I finished last week, but it's altogether too heavy for this time of the year. Then there's the blue mull and the flowered dimity, but I think white will be so much prettier for a lawn party. I suppose Clara's little girl will go to the party. I wonder—"

She was so much occupied in finishing a seam that she didn't try to finish her sentence. Still her thoughts were very busy. She wondered how Mrs. Dennison would look. She wondered if she still possessed the beauty that had won the heart of Harold Dennison, professor of biology in one of the big Western universities.

While Mrs. Warren was in the midst of these thoughts a sudden ring called her husband to the telephone.

She could hear his answers.

"Oh, hello, Dennison. Why, yes, of course I remember you. Yes, I'm one of the trustees and I'll be glad to take you over. No, I'm afraid she can't this evening. She's in the midst of some sewing. All right. I'll see if I can persuade her. Good-by."

In a minute Mr. Warren was back in the sewing room.

"It was Dennison. He wanted to know if I'd take him over to our new library to-night, and said his wife wanted to know if you wouldn't come over and see her while we were gone. Guess you'd better go, hadn't you?"

"Oh, I don't know. I'd like to—" Interest in her old friend and maternal pride struggled together for a moment. She examined the dress carefully. "Perhaps," she spoke slowly, "perhaps I can finish it, and go, too. Yes, I think I'll go."

It was nearly eight o'clock when Mr. and Mrs. Warren arrived at the Spence home. The walk had been a long one, and Mrs. Warren, tired with her incessant sewing, looked pale and worn. She felt the contrast sharply as Mrs. Dennison, the picture of radiant health, came forward quickly and greeted her enthusiastically. Mrs. Warren managed to return the greeting, and then she dropped into a porch chair.

As soon as the men were gone Mrs.

Warren turned to her hostess, and spoke faintly. "I'm sorry—but I'm afraid I shall have to lie down for a few minutes."

In a short time Mrs. Warren was resting comfortably on a couch in Mrs. Dennison's room.

"I'm afraid you ought not to have come to-night. You were too tired."

"Yes," was the answer. "I've been so busy getting Eleanor's summer clothes made that I'm all used up."

"Well, you ought to make her clothes like I make Nancy's," laughed that child's mother.

"I'm sure you look strong enough to spend any amount of time sewing, but it tires me all out."

"That's just the reason," was the quick reply. "I'm strong because I don't tire myself with unnecessary work."

"But surely you don't think pretty clothes for your little daughter unnecessary?"

Mrs. Warren sat up straighter and there was a challenge in her voice.

"But I do," the other replied with conviction. "This is Nancy's summer wardrobe for the most part."

As she spoke she opened a drawer and took out a pair of stout jean knickerbockers to which was buttoned a simple blouse of the same material.

"There's a little skirt that I fasten on when I wish her to be especially dressed up," she added, laughing amusedly at Mrs. Warren's amazement.

"I—don't quite understand—" Mrs. Warren hesitated.

"Do you want me to tell you about it?"

"I wish you would." The answer came with such earnestness that Mrs. Dennison smiled a little.

"It isn't a very cheerful story," she said, "but I'm going to tell you, for you are doing just what I did."

"I began long before baby was born, just as you did, no doubt," Mrs. Dennison went on. "Then, after Nancy came, I went right on making the beautiful things—lovely little frocks, elaborate coats and hemstitched underwear. I stopped reading. I gave up most of my friends and social affairs, and of course I became frail and nervous."

"Well, things went on that way until the summer that Nancy was four years old. That summer Harold's mother and sister came to see us.

"Of course they were very sweet and lovely, but I soon saw that they didn't exactly approve of something. I couldn't imagine what it was, but one day I had it thrust upon me in a very unexpected manner.

"I had started for town to do some errands, but was so overcome by the heat that I came back and fairly crawled into the sitting room and lay down. Pretty soon Mother Dennison and Cora went out on the porch, just by the window where I lay, and after a little I became aware of their voices. And then I saw myself with their eyes—a woman who had wasted the beauty and health and intelligence that had been hers—a sickly, nervous woman who was likely to be a sad hindrance to Harold in his career, the mother of a little girl who was also sickly because she had been too much dressed up to romp and frolic as other children did. As soon as I could I slipped away upstairs almost too stunned to think, but later I did a good deal of it, and—well," Mrs. Dennison patted the little garments in her lap, "these 'rompers' were the result."

"And then?" questioned Mrs. Warren, who had been listening almost breathlessly.

"And then," Mrs. Dennison laughed a little, "why—then I got a spade and made a garden; I got a hammock, and began to read again, and I also began accepting Harold's invitations to go tramping with him for bugs and flowers. And now," she concluded, "Nancy and I are well and strong."

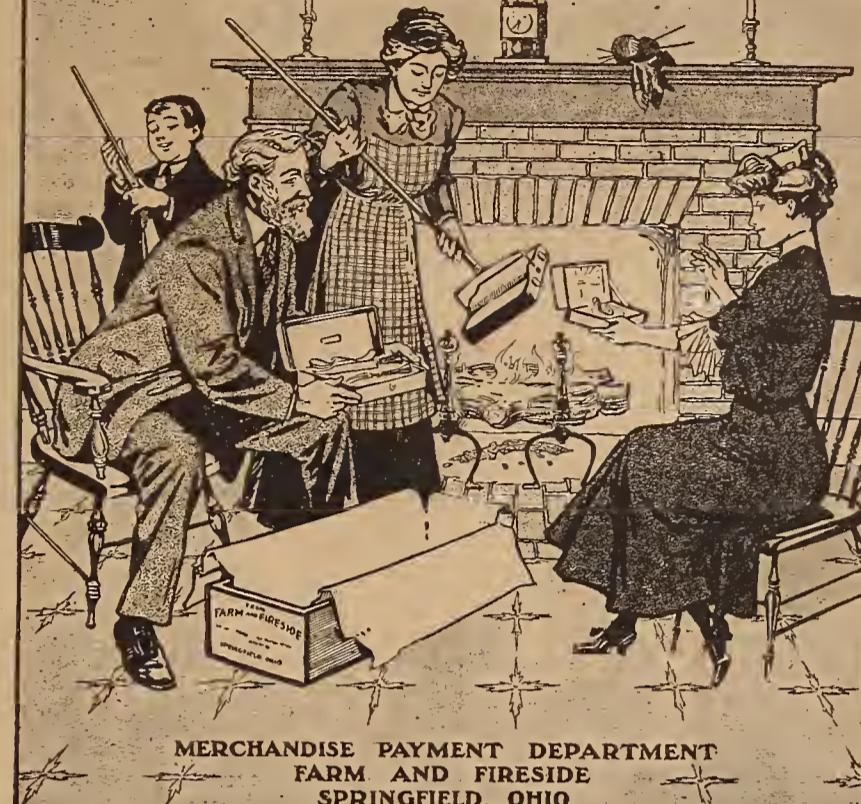
About an hour later Mrs. Warren, absorbed in her own plans and purposes, was walking quietly beside her husband toward their home.

"A penny for your thoughts, little girl," Mr. Warren said, drawing her arm within his own and patting her hand affectionately.

"I was thinking," Mrs. Warren answered slowly, "I was thinking that I wouldn't finish Eleanor's dress to-night, and I don't know as I'll ever finish it. I'm going to make some 'rompers' instead."

"Some what!" her husband exclaimed. Mrs. Warren laughed gleefully. "You'll see what they are in a day or two. They're supposed to be for Eleanor, but I may make some for myself." She laughed again mischievously.

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Ostrich Farming in Southern California

By Arthur Inkersley

THE great diversities of altitude, soil and climate in California render it possible to raise almost every product, animal or vegetable, of temperate or semitropical countries, within her broad borders.

Among the many industries carried on profitably in the Golden State none is more interesting or picturesque than that of ostrich raising, or "feather farming," as it has been called.

Although two or three unsuccessful attempts to acclimatize the ostrich in south-



A Full-Grown Ostrich

ern California, the climate of which much resembles that of South Africa, were made prior to 1887, the real pioneer of the industry in California was Edwin Cawston, who in that year brought forty-two ostriches by sailing ship from Natal, having purchased them in that colony in order to avoid payment of the heavy duty of five hundred dollars imposed by the government of Cape Colony on each ostrich exported, and of one hundred and twenty-five dollars on each ostrich's egg. Although every precaution was taken on board the vessel chartered by Mr. Cawston, some of the birds died during the voyage or soon after landing in California. But enough of the ostriches survived to form a nucleus for the farm.

The sunny, dry climate and sandy soil of Los Angeles County proved ideally suitable for the big birds, and they thrived wonderfully. The Californian ostrich has also been provided by Nature with an even heavier coat of feathers than he wears in his native South Africa, to protect him against the chilly breeze that comes in from the Pacific Ocean.

Ostriches mate when four or five years old, the female laying an egg every two days or so until about fifteen have been deposited in a hollow rudely scraped in the ground by the male. The pair divide the duty of incubation fairly—the male sitting on the nest during the night and

the female during the day. The reason for this division of labor is that the male's feathers being dark are almost invisible at night, and the female's gray or drab plumage is less visible in the daylight. In addition to keeping the eggs warm at night, the male sits on them for an hour or two in the daytime, in order to give his mate an opportunity to procure food and recreation. Ostriches set a most commendable example of marital fidelity, for once mated, they remain partners as long as they live. Even if one of the couple dies, the survivor chooses no other mate, and sometimes sickens and dies, also.

After forty days the chicks begin to hatch. They are about a foot high at birth. For the first few days after emerging from the shell they do not eat, but once they have tasted food, their appetites become voracious. They eat alfalfa, corn, and vegetables of almost every kind. Sugar beets and grape skins from which the juice has been pressed for making wine are favorite articles of food. Bones and gravel form an important part of their diet.

The digestion of ostriches is strong, though their voracity and curiosity induce them to put remarkable, and sometimes fatal, strains upon it. The adult bird will seize and swallow without hesitation or examination almost anything that attracts his fancy, and has even been known to snatch a lighted cigar or pipe from a man's mouth or fingers andgulp it down.

Young ostriches grow very rapidly, and at six months old are full grown, being about seven feet high and weighing about two hundred pounds. The adult birds cannot be said to be beauties, for they have long ago lost the downy, pretty plumage of their young days, and have become bald headed, long legged, scrawny necked and untidy looking. The feathers of the full-grown bird, however valuable they may be (a bird produces in a year

from fifty to one hundred and fifty dollars' worth of feathers), have a soiled, bedraggled appearance, not at all resembling the beautiful, fluffy plumes that we see on the fashionable hat.

The first plucking of feathers takes place when the bird is nine months old, but neither the first nor the second crop is of much value. When plucking time comes, several men enter the corral and close quickly but gently (for an ostrich is very easily frightened and rendered unmanageable) on the selected bird, which they seize by each wing. A hood or stocking is then drawn quickly over the head and upper part of the neck. Thus blindfolded, the bird offers little serious resistance and is forced unwillingly into a plucking box or a V-shaped corral strongly fenced and which does not allow him room enough to kick. An attendant with a pair of scissors clips the feathers, the quills being cut about an inch from the body. After some weeks the stubs dry up and are pulled out without any pain to the bird. A full-grown ostrich yields from twenty-five to thirty large feathers and several small ones. The feathers of the male are black or white, while those of the female are drab. After the feathers are plucked the hood is removed from the bird's head and he is permitted to go free for another period of nine months.

Although ostriches are good natured enough under all ordinary circumstances, during the mating season the male is savage and dangerous. At that time he will run viciously at any one who may approach him, even his keeper. When birds are in this temper the keeper carries with him, as he goes about the corrals, a forked stick, which he places against the neck of an angry ostrich, and so keeps him at a safe distance. The bird kicks with tremendous force, infuriated males having been known to splinter strong

board fences and even to kick a hole in a sheet of corrugated iron. A big ostrich can kick as high as a man's head, but as he kicks forward and downward (not backward), he cannot strike an object near the ground. Hence, if a person unarmed with a forked stick is attacked,



Plucking a Large Bird

the best thing to do is to lie down flat on the ground.

Ostriches are exceedingly inquisitive and come running up to inspect any one who may approach their quarters. Of course, the great birds are enclosed in corrals stoutly fenced, but they stretch their long necks over the bars and peck at anything within reach that attracts their attention.

Ostriches have a curious habit, particularly indulged in on bright, sunny mornings, of dancing around and around at such a rate that sometimes they become dizzy and fall to the ground.

As there are in Cape Colony alone about three hundred thousand ostriches, and several thousands in other colonies, South Africa produces far the larger percentage of feathers, the importations of feathers into the United States amounting to about ten million dollars each year. But the feathers produced in California are quite equal in quality to those that come from South Africa, for the Californian ostriches are bred and fed on scientific principles in a climate and under conditions exceedingly well adapted to their nurture and good health.



A Corral on the Ostrich Farm at South Pasadena

An Eight-Million-Acre Farm

THE biggest farm—if "farm" it can be called—is that owned by Don Luis Terrazas in the state of Chihuahua, Mexico, which measures from north to south one hundred and fifty miles and from east to west two hundred miles, or eight million acres in all. On its prairies and mountains roam one million head of cattle, seven hundred thousand sheep and one hundred thousand horses. The "farmhouse" is probably the most magnificent in the world, for it cost almost one million six hundred thousand dollars to build and is more richly furnished than many a royal palace. On the homestead alone are employed one hundred male servants. The gardens are superbly laid out, the stables more magnificent than those of the German emperor, and there is accommodation for five hundred guests if necessary.

Scattered over the vast ranch are one hundred outlying stations, each one of which has charge of a certain portion of the estate. The horsemen, cowpunchers, line riders, shepherds and hunters number two thousand, and the Terrazas ranch is the only one in the world which maintains its own slaughtering and packing plant. Each year one hundred and fifty thousand head of cattle are slaughtered,

dressed and packed, and one hundred thousand sheep. Don Luis superintends the different industries on his ranch, covering many thousands of miles on horseback during a twelvemonth. Don Luis was at one time governor of Chihuahua, but public life did not suit him; it was too quiet, and he preferred to spend his life riding over the plains and looking after his own enterprises. He is three times as rich as any other man in Mexico, and has the name of being liberal and generous toward his workpeople.

Don Luis is a very handsome man, married to a beautiful wife. He is the father of twelve children—seven sons and five daughters. The sons are all associated with Don Luis in looking after the ranch, while the daughters—said to be the most beautiful women in Mexico—remain quietly at the homestead. All the children were educated in the United States, are highly accomplished, have traveled through Europe, and speak several languages.

Don Luis founded his cattle ranch about fourteen years ago, and four years later he sought to import the finest cattle from Scotland and England. But there was a considerable difficulty in the way. The import duty on foreign cattle was so heavy that it was impossible to bring over

the animals in quantities sufficient for his purpose, so Don Luis appealed to the Mexican government, pointing out the absurdity of restricting importation of good stock into the country, and succeeded in getting the import tax repealed. Since that time Terrazas has increased his stock by the importation of something like five thousand bulls of the best breeds from the famous studs of Europe.

Five years ago Terrazas installed on his ranch four big reservoirs, costing five hundred thousand dollars, besides which there are three hundred wells scattered over the huge farm, some of them going down to a depth of five hundred feet. These wells, the water from which is raised by means of windmills, cost another five hundred thousand dollars. Every kind of grain is grown, and Don Luis is constantly experimenting in the raising of different "foods" for supplying the wants of his immense herds during the rainless seasons.

An enemy which has to be sternly fought on this great ranch is fire, and scarcely a summer passes without great tracts of prairie being laid waste by its destroying advance. Throughout the torrid months there is a man stationed on the "lookout" at every station each hour of the twenty-

four, and directly he sees indications which tell him that a fire has started, he rings the massive alarm bell, and in an incredibly short time men come riding in, ready to fight the danger with their lives if necessary.

The frightened cattle are driven sideways from the line of the oncoming fire, and then the enemy is attacked from the rear. It is no good attempting to stop a prairie fire from the front, for its progress is too rapid and too annihilating. Heavy chains are dragged along the ground, which help to weaken and dissipate the fire. Across the prairie long furrows fifty feet apart are quickly made, and these help to stem the progress of the fire. All night the fight is kept up—and longer if it seems necessary—and not until the last spark is quenched are the men able to take food and rest.

In these efforts to subdue the flames Don Luis and his sons are usually to be seen working like demons and urging their men to greater efforts. Fighting a prairie fire has all the elements of danger, and for excitement it has few equals. For this reason Don Luis takes a fierce delight in combating the flames, and declares that it is one of the fascinations of a prairie life.—Boston Herald.

Sunday Reading

Little Sermons by Phillips Brooks

IS THERE nothing that Christ as your Friend, your Lord, your Savior, wants you to do that you are leaving undone to-day? Do you doubt one instant that with His high and deep love for your soul, He wants you to pray? And do you pray? Do you doubt one instant that it is His will that you should honor and help and bless all these men about you who are His brethren? And are you doing anything like that? Do you doubt one instant that His will is that you should make life serious and lofty? And are you making it frivolous and low? Do you doubt one instant that He wants you to be pure in deed and word and thought? And are you pure? Do you doubt one instant that His command is for you openly to own Him and declare that you are His servant before all the world? And have you done it? These are the questions which make the whole matter clear. No, not in quiet lanes, nor in bright temple courts as once He spoke, and not from blazing heavens as men seem sometimes to expect—not so does Christ speak to us. And yet He speaks! I know what He wants me to do to-day, and I know that I am not mistaken in my knowledge. It is no guess of mine. It is His voice that tells me.

EVERY true prayer has its background and its foreground. The foreground of prayer is the intense, immediate desire for a certain blessing which seems to be absolutely necessary for the soul to have; the background of prayer is the quiet, earnest desire that the will of God, whatever it may be, should be done. What a picture is the perfect prayer of Jesus in Gethsemane! In front burns the strong desire to escape death and to live; but behind there stands, calm and strong, the craving of the whole life for the doing of the will of God. . . . Leave out the foreground—let there be no expression of the wish of him who prays—and there is left a pure submission which is almost fatalism. Leave out the background—let there be no acceptance of the will of God—and the prayer is only an expression of self-will, a petulant claiming of the uncorrected choice of him who prays. Only when the two—foreground and background—are there together, the special desire resting on the universal submission, the universal submission opening into the special desire, only then is the picture perfect and the prayer complete!

MY DEAR friends, never let the seeming worthlessness of sympathy make you keep back that sympathy of which, when men are suffering around you, your heart is full. Go and give it without asking yourself whether it is worth the while to give it. It is too sacred a thing for you to tell what it is worth. God, from whom it comes, sends it through you to His needy child. Do not ever let any low skepticism make you distrust it, but speak out what God has put it in your heart to speak to any sufferer. The sympathy of God for man has just this same difficulty about it, if we try to analyze it. We cannot say that He has done anything for us. We cannot tell even of any thought that He has put into our minds. Merely He has been near us. He has known we were in trouble and has been sorry for us.

TO STAND with the good things of life all stripped away, to stand beaten and buffeted by storms of disaster and disappointment, to stand with all our brethren saying, "Behold, how God hates him," and yet to know assuredly in our own hearts that God loves us, to know it so assuredly, with the intercourse that lies between our heart and His, that we can freely let go the outward tokens of His love, as the most true and trusty friends do not need to take gifts from one another for assurance of their affection—this surely is the perfection of a faithful life. It is the gathering up of all happinesses into one happiness which is so rich that it can live without them all, and yet regally receives them into itself as the ocean receives the rivers.

IN OUR OWN little sphere it is not the most active people to whom we owe the most. Among the common people whom we know it is not necessarily those who are busiest, not those who, meteor-like, are ever on the rush after some visible change and work. It is the lives, like the stars, which simply pour down on us the calm light of their bright and faithful being, up to which we look and out of which we gather the deepest calm and courage.—Success Magazine.

The Courage of Trust

WHAT we need to-day is a courage that springs from trust—trust in God and trust in man. If you trust God you must trust man. Just as if you really loved God, you cannot help loving men; for men are the crowning result of creation, of redemption, of salvation. All the world exists, Christ and all martyrs lived and died, for men. And so your faith in God is a sham unless it leads you to faith in men, as your love for God is a fraud unless it makes you love men. And love and faith in men, and love and faith in God, must ever go hand in hand. There can be no real progress where this mutual trust does not control things. And so I say to you, be brave to trust men. Look for faith in men and you will find it. Look for courage in men, look for honesty and patriotism in men, and you will find and inspire them. You will always find what you look for—never forget that! Look for the mean and the small, and they will crawl out before your eyes. Look for the great and the fair, and they will stimulate you and cheer you on. Oh, let us trust men more, for Jesus trusted men; and if the men He trusted first crucified Him, never forget that at last they crowned Him.

Let us be brave, then, let us pray to be brave—brave for our great land, brave for our splendid heritage of institution, brave for our race's sake. Let us pray to be brave against odds, brave whether the battle seems to go ill or well. Victory is the General's business, to carry ourselves like men is ours. We have nothing to do with odds—our simple duty is to hold the ground where we stand. Oh, pray, then, to be brave. Look around the world and you will see there are plenty to be wise, plenty to be prudent, tactful, cautious—let us pray to be valiant for His truth upon the earth. And may God help us to remember that at last

Only the Master shall praise us,
And only the Master shall blame,
And no man shall work for money,
And no man shall work for fame;
But each for the joy of working,
Each in his separate star,
Shall draw the thing as he sees it
For the God of things as they are.

—W. S. Rainsford.

A Cure for the Blues

ONCE gave a lady two-and-twenty recipes against melancholy; one was a bright fire; another, to remember all the pleasant things said to her; another, to keep a box of sugar plums on the chimneypiece and a kettle simmering on the hob. I thought this mere trifling at the moment, but have in after life discovered how true it is that these little pleasures often banish melancholy better than higher and more exalted objects; and that no means ought to be thought too trifling which can oppose it either in ourselves or in others.—Sidney Smith.

Softly Now the Light of Day

Softly now the light of day
Fades upon my sight away;
Free from care, from labor free,
Lord, I would commune with Thee.

Thou, whose all-pervading eye
Naught escapes, without, within,
Pardon each infirmity,
Open fault and secret sin.

Soon for me the light of day
Shall forever pass away;
Then, from sin and sorrow free,
Take me, Lord, to dwell with Thee.

Thou, who sinless, yet hast known
All of man's infirmity,
Then, from Thine eternal throne,
Jesus look with pitying eye.

—George Washington Doane.

The Cruelty of Thoughtlessness

MOST of the cruelty of the world is thoughtless cruelty. Most of the great heart wounds are inflicted by thoughtless thrusts, flung out often in a moment of anger.

No life is just the same after you have once touched it. Will you leave a ray of hope or one of despair, a flash of light or a somber cloud across some dark life each day? Will you by thoughtless cruelty deepen the shadow which hangs over the life, or will you by kindness dispel it altogether? No matter how you feel or what is disturbing your peace of mind, never allow yourself to send out a discouraging, a cruel or an unkind word or thought.—Success Magazine.

Poems Worth Saving

Faith

I never saw a moor,
I never saw the sea;
Yet I know how the heather looks,
And what a wave must be.
I never spake with God,
Nor visited in heaven;
Yet certain am I of the spot
As if the charts were given.

—Emily Dickinson.

Be Strong

Be strong!

We are not here to play, to dream, to drift,
We have hard work to do, and loads to lift.
Shun not the struggle; face it. 'Tis God's gift.

Be strong!

Say not the days are evil—Who's to blame?
And fold the hands and acquiesce—O shame!
Stand up, speak out, and bravely, in God's name.

Be strong!

It matters not how deep entrenched the wrong,
How hard the battle goes, the day how long.
Faint not, fight on! To-morrow comes the song.

—Maltbie D. Babcock.

To Truth

O Star of Truth, down shining
Through clouds of doubt and fear,
I ask but 'neath your guidance
My pathway may appear.
However long the journey,
How hard soe'er it be,
Though I be lone and weary,
Lead on, I'll follow thee!

I know thy blessed radiance
Can never lead astray,
However ancient custom
May tread some other way.
E'en if through untried deserts,
Or over trackless sea,
Though I be lone and weary,
Lead on, I'll follow thee!

The bleeding feet of martyrs
The toilsome road have trod;
But fires of human passion
May light the way to God.
Then, though my feet should falter,
While I thy beams can see,
Though I be lone and dreary,
Lead on, I'll follow thee!

Though loving friends forsake me,
Or plead with me in tears—
Though angry foes may threaten
To shake my soul with fears—
Still to my high allegiance
I must not faithless be:
Through life or death, for ever
Lead on, I'll follow thee!

—Minot J. Savage.

Thy Will Be Done

We see not, know not; all our way
Is night—with Thee alone is day:
From out the torrent's troubled drift,
Aboove the storm our prayers we lift,
Thy will be done!

The flesh may fail, the heart may faint,
But who are we to make complaint,
Or dare to plead in times like these,
The weakness of our love of ease?
Thy will be done!

We take with solemn thankfulness
Our burden up, nor ask it less,
And count it joy that even we
May suffer, serve, or wait for Thee,
Whose will be done!

Though dim as yet in tint and line,
We trace Thy picture's wise design,
And thank Thee that our age supplies
Its dark relief of sacrifice.
Thy will be done!

And if, in our unworthiness,
Thy sacrificial wine we press;
If from Thy ordeal's heated bars
Our feet are seamed with crimson scars,
Thy will be done!

If, for the age to come, this hour
Of trial hath vicarious power,
And, blest by Thee, our present pain
Be Liberty's eternal gain,
Thy will be done!

Strike, Thou the Master, we Thy keys,
The anthem of the destinies!
The minor of Thy loftier strain,
Our hearts shall breathe the old refrain,
Thy will be done!

—John Greenleaf Whittier.

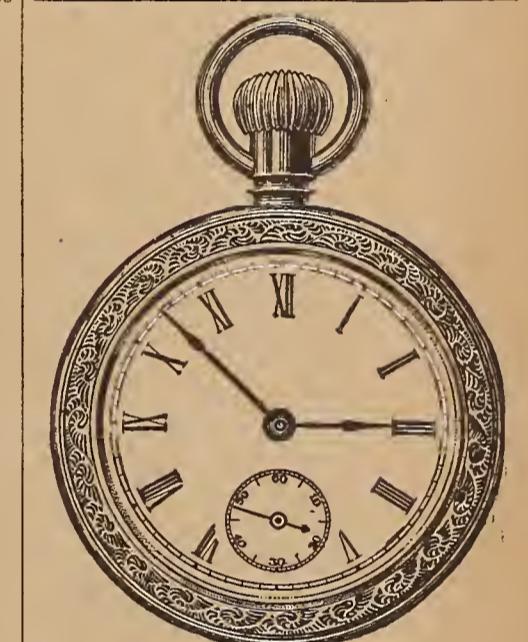
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FARM AND FIRESIDE
SPRINGFIELD, OHIO

Farm Notes

Agricultural News-Notes

Agriculture is beginning to be recognized as the coming industry.

Birds are our helpers. See that no one disturbs them on your farm.

The first shipment of nitrate of soda from Chili to England was made in 1830.

The acreage of rice in Texas this year is estimated at two hundred thousand acres.

In Texas and the Gulf States the pecan crop of 1907 was barely one fourth that of the usual yield.

The number of nut trees now in bearing in California is as follows: Almonds, 1,137,984; walnuts, 689,475.

W. F. Heikes, of Huntsville, Alabama, has been reelected president of the horticultural society of that state.

A growing industry in Hawaii is that of canning pineapples. This year's output will be nearly ten million cans.

California now has over one hundred and forty fruit and vegetable canneries. The number is increasing rapidly.

In the production of Portland cement, Pennsylvania, New Jersey, Indiana and Michigan lead in the order named.

Utah now ranks fourth in the production of beet sugar. In 1907 the output of sugar was one hundred million pounds.

The three most valuable fertilizers for yielding ammonia are nitrate of soda, sulphate of ammonia and cotton-seed meal.

Salem, the capital of Oregon, is now known as the "Cherry City." The Oregon annual cherry fair was held early in July.

In 1907 Montana and Wyoming produced almost one fourth of the entire production of wool and mutton in the United States.

The Mount Clemens, Michigan, beet-sugar company has contracted for the growing of ten thousand acres of sugar beets this season.

The last United States census report gives the average yield of alfalfa at a little over five tons an acre, or almost four times as much as red clover.

The San Francisco millers are buying large supplies of the Blue Stem, Turkey Red and Club wheat. The main supply comes from Washington and Oregon.

The number of creameries in the United States is estimated at six thousand. Of these about eighteen hundred are operated on a co-operative basis.

A beet-sugar factory is to be erected at Santa Ana, in Orange County, California, which will require the growing of seven thousand acres of beets.

The importation of twenty thousand bushels of yellow dent corn from Argentine by the Glucose Trust indicates that we have a formidable rival in corn production.

Mr. E. K. Stater, state dairy commissioner, has accepted the position of assistant professor of the dairy department of the Minnesota School of Agriculture.

Four or five hundred acres have been planted to peanuts this season near Fullerton, California. The peanut plant requires less moisture than most of the ordinary farm crops.

Argentine has a wheat king in the person of Antonio Devoto. He had 197,680 acres under cultivation in 1907. It took about one hundred and fifty trains of cars to move the crop.

The McIntosh red apple is leading all other varieties in western Oregon. The original tree is now one hundred and seventeen years old. It is growing on the McIntosh farm, not far from Ottawa, Canada.

The government of Canada has appropriated four million dollars to aid the spring-wheat growers in the Canadian northwest who lost their entire crop by a late frost last season.

It is a matter of interest to note that of the forty-three graduates at the New Jersey Agricultural College, most of them returned to their farms, while others accepted positions as farm managers.

The millers of North Dakota have organized a spring-wheat flour league which has for its object the prevention of the practice of branding winter-wheat flour as spring-wheat flour.

Mr. H. M. Davis has been appointed as a special commissioner of the Department of Agriculture to visit foreign countries and ascertain the possibilities of increasing the demand for American flour.

No wiser use can be made of national or state funds than that of judiciously expending them in conducting research and experiment work at the national and state agricultural colleges and experiment farms.

Organization is the order of the day. A farmers' trucking association at Milan, Tennessee, has been authorized by the secretary of state for the promotion of the trucking and fruit industry in that locality.

The passage of the pure-food laws is promoting the erection of canneries. Rome, Georgia, is to have another, which is to be run by the boys of the Berry Industrial School. A good move in the right direction.

A representative of the experiment station at Kiel, Germany, states that the dairy literature of America is more fully represented in the library of the University of Wisconsin than in any other institution that he visited.

The Nebraska and Michigan pure-food commissions are determined to prosecute farmers and others who knowingly pack bad eggs with good ones. The Nebraska dealers claim that their losses amounted to several million dollars last year.

The appropriation of \$12,142,146 by recent action of Congress means much to



Scenes in and Around the Home of The Hon. N. J. Bachelder, Master of the National Grange, at Concord, New Hampshire

the farmers of the United States and our insular possessions. It will be judiciously used by Secretary Wilson in the interests of progressive agriculture.

Various countries in Europe and America to the number of forty are organizing an International Institute of Agriculture for the purpose of making an exhaustive study of the most important industry in the entire world, that of farming. These governments are to meet in Rome on May 28th in a palace built by the King of Italy, who is responsible for the formation of this International Institute of Agriculture.



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RESULT OF THE Pony Contest

The contest for "Duke" and "Bonny," the two handsome ponies offered by FARM AND FIRESIDE last May to the contestants who should send the most subscriptions by July 30th, has now closed. It was even more successful than was anticipated, and therefore more money than we originally announced has been spent on the prizes. Every contestant has been liberally and fairly rewarded not only by a cash commission for each subscription obtained, but by a handsome prize as well. We regret that we have not room here to publish the names of all the prize winners, but below are the names and addresses of the first 28 Grand-Prize winners, the first two being pony winners.

PONY WINNERS

NAME	ADDRESS	CREDITS
1. Dorothy Miller, R. F. D. 4, Franklin, Ohio	7120	
2. Leonard Foreman, Osceola Mills, Pennsylvania	5940	

GRAND-PRIZE WINNERS

NAME	ADDRESS	CREDITS
1. Juanita Kennedy, R. F. D. 1, Box 38, Cleveland, Tennessee	5870	
2. Allen Love, R. F. D. 2, Dayton, Ohio	5240	
3. J. Maus Rinehart, R. F. D. 11, Westminster, Maryland	4060	
4. Ethel May Carpenter, R. F. D. 2, Box 81a, La Porte, Indiana	3550	
5. John Wilson Pearson, 845 S. 5th St., Canon City, Colorado	3070	
6. Anna Murphy, R. F. D. 4, Lafayette, Indiana	2950	
7. Amelia Klettner, 810 Caldwell St., Newberry, South Carolina	2930	
8. Alpha Morrison, Box 353, Stamps, Arkansas	2900	
9. Leon H. Coon, care H. T. Coon, Homer, New York	2850	
10. Ruth Thompson, R. F. D. 2, Jamestown, Ohio	2660	
11. Barbara B. Ringgold, R. F. D. 2, Bridgewater, Virginia	2600	
12. Richard Emery, R. F. D. 6, Box 6, Girard, Kansas	2520	
13. Donald H. Matthews, Tioga St., Johnstown, Pennsylvania	2320	
14. Cleo Rinehart, R. F. D. 4, Box 17, Bellville, Ohio	2300	
15. Mae Thomasson, 1324 Jefferson St., Paducah, Kentucky	2290	
16. Florence Creighton, R. F. D. 1, Dublin, Indiana	2270	
17. Harry Sherbet, Box 29, R. F. D. 2, Clarksville, Ohio	2250	
18. Eva May Goodman, R. F. D. 3, Box 18, Dinuba, California	2250	
19. Mary Barton, 412 Octavia Ave., Bartlesville, Oklahoma	2200	
20. S. B. Steves, Jr., 126 Erie St., Syracuse, New York	2030	
21. Clara Fritsche, 211 E. Cleveland, Mangum, Oklahoma	2030	
22. Paul S. Clay, Mangum, Oklahoma	1990	
23. Grover Graves, 314 Cain St., Decatur, Alabama	1970	
24. Lura Herin, 217 S. Oak St., Kendallville, Indiana	1920	
25. Freida Pestel, R. F. D. 1, Valley Crossing, Ohio	1910	
Paul I. Martin, R. F. D. 1, Box 6, Lake Charles, Louisiana	1910	

With the close of this contest, FARM AND FIRESIDE has given its pony contestants, during the last two years, fifteen Shetland ponies, four pianos, and over \$15,000 in other prizes and rewards.

We shall conduct no more pony contests this fall and winter, but we trust that every good friend of FARM AND FIRESIDE will become a member of our new Merchandise Payment Club, which can be done by merely writing to the Merchandise Payment Department, FARM AND FIRESIDE, Springfield, Ohio, and saying that you want to become a member.

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5 Years, 120 Numbers, \$1.00



Champion German Coach Horse "Winno"

Changes for the Better

A New Era for Farm Women; Success for Young Farmers

ONE evening last week an old farmer sat on the front porch watching people pass on their way to and from town. When I joined him I noticed that he had a small book and a pencil in his hands. Said he, "I have been interested in counting the people passing. While sitting here I counted forty-one different rigs. Six were farm wagons and the rest different kinds of buggies and surreys. The six farm wagons contained nine men, all in rough, soiled clothes. The surreys contained seven men, twelve children and nineteen women. The buggies contained thirteen men, mostly young chaps, four children and thirty-two women. Thirty-four of the women had no hats on, and most of them had short sleeves. Most of the young chaps had rubber-tired buggies, and very gay harness on their horses. All of the women were dressed in either white or very nearly white. The men were dressed respectably, but very plainly.

"Thirty-two years ago I sat on my brother Tom's porch, near Newton, at just about this time in the evening, looking at people pass. I remember it well, because it was the last time I saw Tom alive. There were probably as many rigs passed as has passed here this evening, but very nearly all were farm wagons. There was not half a dozen buggies, and no surreys. And there were fully six men to one woman. Not a woman was driving. This evening more than half the rigs were driven by women. Then about all of them were dressed in darkish clothes. Now about all are dressed in white. When I was young and took my sweetheart out for a ride we went on horseback. When we wanted to go to a picnic or something of that sort we made up a farm-wagon load of six or eight. Things have surely changed.

Women and the Good Amusements

"I have a few figures I want to read to you. As we came on three different railroads, and rode on two steamers, I amused myself by counting the men and women who were traveling in the same cars and boats we were. Averaging it all up, I found I had an average of six women to one man. I often find myself wondering where are the men. I attended a chautauqua—I called it a picnic—and found in the gatekeeper an old boyhood chum. We sat and chatted nearly two hours, and I asked him if he had noticed that the ladies were doing about three fourths of the traveling, picnicking, etc. He said he had, and he gave me the count of people passing through the gate for one day, and the average was four women to one man. Afterward I went to a local horse race and found about eight or ten men to one woman. We went to a theater and found about three fourths of the audience women. I and a friend went to a rather gay vaudeville show, where the dancing of the girls was lively and lofty, and there were

fully twenty men and boys to one woman there. We went to a fashionable church to hear a noted preacher, and found six or eight women to one man. Sometimes I think the women are vastly superior to the men. Then, again, I think they are putting it onto the men rather strong, doing all the traveling, picnicking and driving, while the men are pegging away at their work. But these things all work out for the best of humanity, and the world is growing better."

Changes from Tenants to Owners

A few days ago I passed a farmhouse that had recently come into the possession of a couple of young people who are full of energy and go. For years it had been occupied by tenants, and the house had been surrounded by chickens, ducks and small pigs the year round, and naturally the bit of a lawn and the yard all about the house was in bad shape. Such a great change had been wrought in the few months that the young people had lived there that I dropped in for a little visit and to ask a few questions. The young woman said they found the yard all rooted up and rough, and great wallow holes near the well and behind the kitchen, and the two scrubby shade trees in front half barked, half the front fence down, and everything both about the house and old barn in terrible shape. They were in debt, but decided they couldn't afford to live in a place that looked so dilapidated, and they set to work to fix it up. A wide, shallow drain was opened to drain the barn yard, and the soil taken out was drawn to the house and all the holes and hollows filled up and leveled and the whole seeded to grass. The scrubby trees were pruned up, and the front fence torn away and woven wire put in its place. Small boxes were filled with rich soil and placed around the porch, and flowering plants set in them, and they seemingly transformed the porch into a flower bed. It is plain that in a very few years that place will be as nice as any along that road.

Changing from City to Country

I have letters from two city men who would like to quit the city and try their luck on farms. One, who lives in Kentucky, says he can rent a farm of sixty acres right among relatives and friends who will advise and direct him, and he has a small amount of cash on hand for tools, stock and other necessities, but still he is a little in doubt about tackling the task. He asks my advice in the matter. He is only thirty-four years of age, and has a good wife to help him, and though he is "green" he is about the right age to have good, sensible ideas.

If I stood in his shoes I would go in, and go in to win. He can win if he sticks to practical business and doesn't go chasing after rainbows. I would aim to rent that place about two years, then

buy either it or another. A tenant farmer works one third or two fifths of his time for somebody else, and he cannot plant a tree nor a shrub, nor plan a campaign more than a year ahead. I would rather own ten acres than rent fifty. It costs a man and his wife very little to live if they are sensibly economical and live on such food as they can grow. But hired help and food for stock cost money. A farmer of my acquaintance who is fairly successful tells me that his working stock require half his farm. He keeps three horses, three cows, and butchers four hogs each year. He has forty acres; and pasture, meadow and grain for the stock enumerated require twenty acres. I have told him he can dispense with one horse, one cow and one hog if he would manage a little better, but he thinks he cannot. If one rents sixty acres, he farms forty for himself and his stock, and twenty for his landlord. Yet I know many tenant farmers who have made enough money from rented farms to buy farms of their own. With his relatives and friends to advise and help him, this young man should be able to at least make a good living the first year, and more each year thereafter.

My other correspondent seems to want to tackle a different proposition. He is practically out of work as owing to a shortage of material the firm he has worked for about fifteen years has decided to shut down indefinitely. He says the chances of obtaining employment in other cities are slim, and he must either change his trade or get into the country and try to make a living there. He has kept a few chickens on part of the lot he lived on until he has learned a good deal about them. He has also had a little ten-by-thirty-foot garden and managed to grow a good deal of stuff in it. He has saved up about six hundred dollars, and thinks he would like to buy a small place near some good town and try to make a living growing vegetables and raising poultry. He says he would like my opinion about it.

He can make the living if he goes about it right. Probably if I should tell him what a man I am acquainted with has done he will get a few pointers that will get him started toward success. This man has five acres of land, three fourths of a mile from a town of three thousand inhabitants. He has one acre in garden, two in corn, one in forage crops of different kinds, mostly alfalfa, half an acre in poultry yards, and half an acre in house lot and yard. He keeps a pony to haul his produce to town, do light cultivating, etc., and hires his heavy plowing done. He is rather reticent about his affairs and it is difficult to get figures from him, but he gave me enough to show that he is doing very well. Last year he grew one hundred and seventy-one bushels of corn on two acres; cut

his alfalfa three times, and sold over two hundred dollars' worth of plants and vegetables, and nearly three hundred dollars' worth of poultry and eggs. This year he had a quarter acre in oats, a quarter in wheat for his poultry, and one and a half in corn. The wheat and oats were quite heavy and he is feeding them in the sheaf to his poultry. His corn looks very fine. I am well satisfied that he is making money, but he will give no particulars. After his corn gets up about two feet high his poultry are given the run of the little field, and it is an ideal place for them. I asked a relative of his how he was getting on, and he said, "Well, he is always selling something, and as he buys very little, I am satisfied he is doing well. I know that he loaned a man five hundred dollars last year, and has more to loan." He is busy on his little place all the time, and grows splendid stuff.

Changing the Plan of Farming

Another Kentuckian says he owns a hundred acres of pretty good land, and he would like to know what sort of stock to raise on it to make the most money. When one cannot see the land this is a difficult question to answer. He says the land will produce thirty bushels of corn to the acre. That is not much of a yield, and the first thing I would do would be to increase it to double by growing clover or cow peas and applying manure. I would not waste time and labor trying to grow wheat if ten to twelve bushels an acre would be all I could get. I would make corn, hogs and clover or cow peas my specialties, and I would arrange matters to increase the fertility of that land as rapidly as possible. Run it up to fifty bushels of corn to the acre. It surely can be made to yield that much. Then I would try five acres in alfalfa. Select land that is well drained, plow and pulverize until it is like a garden, get the seed from Kansas, and sow as early in September as things can be got ready. If it succeeds, gradually increase the area until half the farm is in alfalfa. For hay there is no crop equal to it, while as a soil enricher it is far ahead of anything. In hogs I would get first-class stock. It costs a little more at the start, but one soon gets all that back. I would not have any special crop season for hogs, but would aim to have some to turn off about every month in the year. The price varies but little now, and a summer hog brings as much as one sold in winter. To make money with hogs one must push them from birth to marketing time. Two hundred to two eighty is about the weight to market them with greatest profit. This man is in a good section to make farming pay well if he manages carefully. By farming as I suggest he will have to depend but little upon hired help, and that makes him practically independent.

FRED GRUNDY.

A Cheap Corn Crib

By W. B. Ellsworth

LAST fall I was compelled to build a corn crib, and wishing to make it as cheaply and as good as I could, I built it on this plan:

I made a crib eight by forty feet, setting a row of posts for each side, four feet apart. I made this crib eight feet to the eaves. Then I put in a concrete floor, raising it six inches above the ground.

Before putting in this floor I tied the crib the long way with two-by-sixes spiked to the posts, and crossways with two-by-fours for rafters, but spiked to the posts, coming flush with the roof line and not laid on top of the two-by-sixes; then I tied crossways below, giving head room, with one-by-six lumber.

For the outside I used a wire cribbing, which can be procured in a number of widths, for all except the end from which I feed.

For my roof I used old boards, and covered with a paper roof.

My posts I cut in my own timber; my two-by-fours and two-by-sixes cost me four dollars and thirty-eight cents. I used eleven sacks of cement, costing five dollars and fifty cents; three yards of

gravel, forty-five cents; wire cribbing, of which I have some left, nine dollars and ten cents, and four squares of roofing, which cost me seven dollars and forty cents. Staples and nails I did not count, as well as the cost of old boards, which most every one has. I did all the work mostly at odd times, so do not count that, so that the total cost was twenty-six dollars and eighty-three cents.

I was told that the concrete floor would be damp and spoil the corn. It has not been damp at all, and the season was bad for corn, freezing and thawing, with a bad quality of corn to begin on.

The wire cribbing is the finest thing I have seen for drying out the corn. While I thought it would dry faster than a board side, I did not have any idea that it would dry as fast or as far in as it has. The crib sets in a sunny place and faces the south, and of course this helps. The wire does not bulge with the weight of the corn, as it is very heavy, weighing about twenty-seven pounds to the rod. So far I am so well satisfied, that if building a single crib I would build another just like it.

Abandoned Farms

By C. H. Maranville

APROPOS of this question, which Mr. Card discussed in a late issue of FARM AND FIRESIDE, a few points by a resident of New England may be of use to some one wishing a little more definite information; and if it reaches the eye of some sturdy fellow with plenty of sense, who wishes the many advantages of splendid scenery, pure water and pure air, with a good, bracing climate, let him come; there is room for many such.

Despite the fact that most Western people look on New England as a rocky, worn-out, worthless place, we have fine farms, excellent schools, many fine libraries and other advantages a new country seldom has, and among them last, and perhaps best, hardly a town so poor it cannot support one or more churches.

But this is digressing from the abandoned farm, of which practically there are very few, except, perhaps, in some towns bonded many years ago to pay for building a railroad, and of these there are not many. Farms lying on the extreme uplands or on the mountain, towns like Peru and Mount Tabor in Vermont, are turned into pastures for young cattle,

sheep and colts. The buildings in many cases are still standing. But these places are much better for that and for the regrowth of timber than for ordinary farming.

However, there are plenty of well-situated farms that can be bought very low, not because they are worthless, as so many seem to think, but for various causes their owners are tired of farming—not the least of which might well be the discouraging problem of incompetent help—and there is a scarcity of good men to manage farms; consequently, many of them are offered at a great sacrifice. This is the chance for the man starting with small capital. There is no reason why a steady, industrious man cannot make money on them; they can be made very productive. Fruit of all the hardy kinds, corn and potatoes—all are raised in abundance—and the small dairy is greatly in favor.

I have known of many instances where people have bought such practically abandoned farms on easy terms of payment, and have lived comfortably on them and paid for them in a few years.

Around the Farm

Items of Interest and Value to the Progressive Farmer

Wheat Growing

THE successful cultivation of wheat on the same soil for a number of years requires more art than is demanded in the growth of any other grain crop. It is an easy task for a farmer to grow wheat on new soils that are adapted to the peculiar needs of the plant, but such fields sooner or later fail to produce sound and healthy plants that have the power and vigor to withstand the attacks from insects and the various maladies to which they are exposed.

Having lived for a number of years in the wheat-growing section of Kansas, I have devoted considerable attention and study to the soil and climatic influences which affect this crop, and my observation and experience have convinced me that it is more liable to smut, rust and shrink in some soils than in others. This observation has also been found the same by results in New York and other states where wheat has been grown for a long series of years on the same farms.

As rapidly as the soil becomes exhausted in certain elements of plant food, the plants fail in constitutional vigor and become easy prey to disease and attack from insect pests.

Favorable Conditions for a Good Crop

With wheat, the same as with all other crops, there are certain conditions that must be right before a good crop can be assured, and this leads to the direct question of making these conditions favorable. After we have made these conditions favorable we have accomplished all that is possible for us to do, and must leave the results to the influences over which we have no control. In my experience with growing wheat I have found that there are four important essentials in growing this crop, which I would name in the following order: The presence in the soil of the necessary amount of available plant food. The absence of surplus water. Good seed of some kind of wheat that is adapted to the farm and climate. Thorough tillage.

It matters little how thorough the tillage or how good the seed or how perfect the drainage, if the soil is deficient in the elements necessary for a full development of the plant a good crop will not be produced. If a soil is fairly rich in plant food and the other three essentials are neglected a good crop will often result during certain favorable seasons. The first problem for us to consider is how to put this plant food into the soil in the most economical manner, and many will ask if they should resort to the use of commercial fertilizers as an aid. I would say yes until they can get their land up to a condition that will make it possible for them to grow a crop of some kind of clover or other legume. After this I would adopt a short rotation in which but one crop of clover was harvested and the second crop plowed under to increase the humus and nitrogen content of the soil.

Rotation of Crops in Connection With Wheat Culture

It is not my purpose to lay down a definite rotation of crops for all of the readers of FARM AND FIRESIDE, for that would be pure agricultural quackery, for a system of crop rotation in connection with wheat which might pay best in one locality would not be at all adapted to other sections. No man can lay down a system of rotation which will meet the peculiar exigencies of California, Texas, the Dakotas, Maryland and New York; however, when we plan our rotation there are certain results which should be brought about, such as maintaining the supply of nitrogen and humus in the soil and keeping it in the best possible mechanical condition.

On all soils where grain growing is followed for a long time, and where the crops are removed from the soil and no manure returned, the supply of potash and phosphoric acid must be maintained by the use of incomplete fertilizers. The wheat plant is a peculiar plant and requires rather peculiar conditions of soil and tillage. As its grain is superior to all other grains, so in its habits it is more peculiar and exacting than other grains. It requires a fertile, mellow soil that is free from weeds, and the fertility must be a refined fertility. Rank manure upon which corn would thrive is very distasteful to wheat. It thrives best on new land richly endowed with organic matter that has been accumulating for years, and the rotation best adapted to promoting the growth of this crop is one whereby organic matter is added to the soil at

least two years before the wheat crop occupies the soil. Thus in clover, corn and wheat we have an ideal three-year rotation; but in certain sections potatoes are added to this rotation and commercial fertilizers applied to the crop, the wheat crop utilizing the plant food which the potato crop does not appropriate from the soil.

The introduction of improved machinery has made the planting and growing of potatoes and beans possible, and the ground can be fitted for wheat in no better way than by the growing of these crops. When these crops or a crop of corn can be removed from the ground by the latter part of September, the field may be sowed with very little labor.

Tillage

Land that is to be seeded with wheat should be plowed early and kept well cultivated or harrowed up to the time the grain is to be seeded. From my own observation I am of the opinion that the time of seeding is not as important as getting the soil well prepared, and I would much rather delay seeding until the first of October than to hurry the grain into the soil before it is thoroughly prepared for its reception.

None but good, clean, plump seed should be sown, and when the seed wheat is mixed with cockle it should be run through a fanning mill before it is sowed. There seems to be a prevailing idea that wheat will run out and that the seed should be changed every few years; but when we have a variety that is doing well we should be slow to make a change, and when we do we should make it in a slow way. Many farmers that I know have the same variety of wheat that they had ten years ago, and it still continues to produce satisfactory crops; but these men have sowed only the best seed, and not until after it was cleaned and run through a fanning mill.

On farms where there are two or three kinds of soil it is often a judicious plan to change the seed from one kind of soil

Green Manuring and Liming for Run-Down Soils

A SUBSCRIBER, F. W., Brooklyn, New Jersey, writes as follows:

"I have taken your paper for the last sixteen years, and am much pleased with it, and expect to take it as long as I live. I was brought up on a farm in Middlesex County, New Jersey. Thirteen years ago I left the farm for a good cause, and not because I dislike farming, for I love the green fields and love to work from early until late, drive good horses and raise good crops.

"I am now in the city railroading. Last spring I bought seventy acres of land, clay loam, well drained and somewhat run down, but which raises good rye and fair grass. There is no house on it, and I don't wish to build until I go there to live. The land is free of debt and I have money to build a house and a little to help the place. Would you please state in your next issue what manure value there is in an acre of rye plowed under, and what is the best time to turn it under? I expect to use lime on this green manure. Also give me the value of an acre of buckwheat, the time to turn it under, and the same for cow peas. What I wish to do is to sow cow peas and plow them under, sow with rye and plow it under, sow with buckwheat and plow it under, then sow with rye and seed with grass seed. I wish to get three crops to plow under (first turning under sod and lime at the rate of fifty bushels to the acre).

"How many bushels of buckwheat, rye and cow peas must I sow to the acre to plow under? Is this seed better drilled in or sown broadcast?"

The Benefits of Crops Plowed Under

This writer has outlined a generous method of treatment which should result in greatly improving his run-down soil. Green crops plowed under possess fertility value in two distinct ways. First,

plant decays these good results do not appear. Some plants decay much more rapidly than others, and the good results are therefore much more quickly apparent. Rye when ripe and woody decays slowly, and the first results may be injurious rather than beneficial. The manure value of a ton of these different crops could be figured out from analysis tables, but it is really not the important thing to know, since the material is taken from the soil anyway, only to be returned to it. This statement is not true of the cow peas, for here another factor enters in. All members of the great clover, bean and pea family belong in a class by themselves, for they are able to get some plant food which they do not take from the soil. Of the three elements of plant food which are likely to be deficient in the soil, nitrogen is the most expensive and the one most likely to be lost. This the cow pea can get from the air for its own growth, and when turned under will leave an added supply in the soil for the succeeding crops. Plants of this class, therefore, have the double advantage that they furnish humus, like all others, and gather nitrogen in addition. Hence the cow peas are the most valuable of the three crops which the correspondent mentions. His program is a good one, however, for it plans for a continuous growth of crops, and it is often necessary to begin with other plants than legumes, for much run-down land will not grow them well at the start.

The use of lime as planned is also a safe course to follow. Green material turned under tends to develop an acid condition in the soil, and this acid is unfavorable to the growth of clover and many other plants. The lime will correct this trouble. It may also help the mechanical condition of this clay loam if it is inclined to be heavy and hard.

Rye and Buckwheat for Green Manure

Rye is a good crop to start with in such a program, for it will grow under quite unfavorable conditions. Being so dry and woody when ripe, it should be turned under before being mature, preferably not later than when the heads begin to form. Even then it will in many cases exhaust the soil of its moisture to such an extent that other crops will not start readily.

Buckwheat is also a good crop to be used for this purpose. It is a crop which has a peculiar effect in improving the mechanical condition of the soil. I do not remember ever to have heard an explanation of the reason, but all practical farmers who have grown it much know the fact that buckwheat leaves the ground in a much mellower and better condition than other grains. Unlike rye, its straw decays rapidly and will quickly help to improve the condition of the soil. I remember well the effect on my own farm where part of a buckwheat-straw stack had been allowed to rot down. The field is a high one, sadly lacking in humus. The year I first saw it, potatoes were growing in the field. Where this stack had been the yield was grand.

One bushel of buckwheat, two and one half bushels of rye and two to two and one half bushels of cow peas to the acre are sufficient for good results for green manuring. They may be sown with a drill or broadcast, as is most convenient. I prefer the drill, for the reason that with a good drill all the seed is put under and at a uniform depth. The same result may be had with less seed than when sown broadcast. F. W. CARD.



A Field of Wheat Grown in Rotation With Clover, Corn and Potatoes

to another. This also applies to other grain crops as well as wheat.

Drainage

On many farms wheat growing can be carried on with profit only after a large outlay for tile drains; but this is also true with other crops, and while all farmers are not in a position to tile drain their farms in one year, yet they may so plan their management that they may drain a few acres each year until they have all of their land in condition to grow profitable crops of this grain. The beneficial results of tile drainage are so marked that one is stimulated to increase his efforts until the whole farm may be made to produce better crops of wheat as well as other grains. W. MILTON KELLY.

Fall Seeding of Timothy

I FIND it a good plan to sow timothy seed in the fall, even if the ground is to be sown to clover the next spring.

Under the usual system of rotation of crops it is desirable to get a catch of some kind of grass, to prevent breaking the regular rotation, and if the timothy seed is sown on the raw ground with the fall-sown wheat, failure will rarely occur. Even if the clover fails, the timothy remains.

If there is a catch of clover and it makes a good crop, the timothy helps to hold it up and prevent as much lodging as if it were alone. Then, again, the mixture of the two kinds of grasses makes a better quality of hay than either will if grown alone. W. HANSON.

there is the actual plant food which they contain, which may become available for other plants as these decay. Much of this, in some cases all of it, has come from the soil, so that nothing is gained in actual plant food, though it may be rendered more available, and some of it may be brought from the subsoil when deep-rooted plants are grown, being left nearer the surface for more shallow-rooted plants which may follow. Neither rye nor buckwheat are deep-rooted plants, and neither adds plant food to the soil.

The second, and more important, office of green manures is to add humus to the soil. Lack of fertility is far more often due to lack of humus than to lack of plant food. While humus does furnish plant food, its more important office is to improve the physical condition of the soil. It renders land more friable, putting it in better condition to be worked and for seeds to sprout and plants to grow. A still more important influence is in increasing the water-holding capacity of the soil. When well filled with humus a soil will take up and retain decidedly more water than when deficient in humus. Humus also affords food for the beneficial soil organisms, which play such an important part in the fertility of soil.

Cow Peas and Nitrogen

Now, so far as we know, this humus is equally valuable whether it comes from one plant or from another. It should be remembered, however, that humus is decaying plant material, and that until the

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Review of the Farm Press

What Others Are Saying About Important Farm Matters

The Clover-Seed Crop

CONDITIONS seem to be favorable in a large part of our territory for a good growth of clover seed this year where the first crop was removed before the Fourth of July. We have seen meadows this year where the second growth on July 12th was five or six inches high, and other meadows that have evidently been pastured as per our advice, where the clover on the tenth of July was just beginning to come in bloom.

Much, of course, depends upon the weather. With early cutting and a good stand and dry weather during July and August we may reasonably expect a crop of clover seed that will go far toward supplying the constantly increasing demand. Where the mowing has been delayed until the tenth of July the danger is that grasshoppers will trim off the second growth to such an extent that it will not produce a good crop of seed. It is of course too early to predict the results, as no one can predict with certainty the weather. We are now speaking simply of prospects.

Wherever there is a good stand and well filled, farmers should use every means to save this crop. It is scarcely possible to conceive of a crop of clover seed that will be so abundant as to reduce the price below a compensatory point. If it does it can be held over. The interests of the West demand that we save every bushel of clover seed possible this year. Farmers, and especially dairymen, are just beginning to realize the value of this crop, although they do not yet realize the importance of cutting it early in the season. Clover cut when the heads are all turned brown and cured under the best conditions is worth just about half as much as when cut when it is in full bloom, or, in other words, when one third of the heads are turned brown.—Wallaces' Farmer.

Germless Eggs

IT is a wonder to me that the trade has not sought for "germless eggs," backed by the guarantee of a responsible party, long before this. Most people in this part of the world want animal food in some form as part of their bill of fare, rather than an exclusively vegetable diet. Of all the forms of animal matter used as human food, an egg is best calculated for transportation to distant markets, and can be successfully kept in good condition easier than flesh, fish or milk. Nature has provided in an egg all the elements of matter needed to grow and sustain the life of a chick for three weeks or more, thus making a complete food of it. The only other example of a complete food which we find in Nature is milk. While milk is easily susceptible to all sorts of bacteria and other forms of decay as soon as drawn, an egg is done up in a neat package enclosed in a case that is almost impervious to air and water, and then surrounded by a protecting calcareous shell or case. In the case of a germless egg, this package of animal food will keep in good condition for eating for weeks and months in ordinary surroundings, either summer or winter. If, however, at a certain period in the formation of the egg it is fertilized, we have an entirely different proposition, so far as preserving it in good condition for eating is concerned. It now only awaits the application of a certain amount of heat for this germ of life to begin to develop into the chick for which Nature has provided this package of food. The necessary heat may come from the bodies of broody hens sitting on the nest, from an incubator, from the sun, or even from fermenting manure or other substances. It takes but a short exposure to the necessary heat for development sufficient to be discerned with the naked eye, even without breaking the shell. Remove the source of heat after development has once begun, and death results within the shell; and instead of an appetizing package of food we have what might properly be called a coffin.

In view of these facts, is it any wonder that a germless egg is more to be desired than a fertile egg when looking for table supplies?

A hen will lay the same number of eggs, regardless of whether there are males in the flock or not. Just at what period in the development of the egg the germ of life is enclosed is not so well known; but for all practical purposes we may conclude that two weeks after the males are removed from the flock the eggs laid will be germless. Ten days after I

removed the rooster from my "hen barn" I placed four eggs in an incubator, and one of the four proved to be fertile. About ninety-five per cent had previously been fertile. At present there is no known way of determining whether or not an egg is fertile, short of applying sufficient heat to start the germ of life; hence the consumer who buys germless eggs must depend largely upon the honesty of the seller. This seems to present great possibilities for building up a reputation and placing a little bit of "character" into the eggs as well as the barrels of apples we place upon the market. The most approved style of package at present seems to be small boxes or "cartons" holding one dozen each. These are sealed, and the guarantee printed on the box or seal. In view of the chances which the ordinary grocer's egg runs, either from being left in the nest several days under a broody hen, or sitting about a hot grocery, or in the freight car moving slowly to market, or standing upon some siding switch, to say nothing about the subsequent months in cold storage, it is a wonder that so many eggs reach consumers' tables in edible condition.—Mapes, the Hen Man, in the *Rural New-Yorker*.

How to Start With Hogs

FOR capital, labor and time required there is no business of any kind in Colorado that is paying larger profits than raising hogs where the grower is an expert. As high as three hundred per cent net profit has been made in six months under the conditions which we find on the ordinary farm.

The possibilities of so large profits have induced many farmers and business men who have had no experience with hogs to go into the business.

Many of these beginners with no knowledge have started on a large scale and have lost money. Handling hogs profitably requires skill and experience, and the beginner should start slowly and not get these at too great a cost.

Select any one of the four breeds you like best—Poland-China, Berkshire, Duroc-Jersey or Tamworth.

Get a good judge of hogs to select for you from one to five sows, not more. Select good individuals that come from prolific strains on both sides.

With careful management from twelve to twenty pigs should be marketed each year from a prolific, mature sow.

The beginner should study his hogs closely, becoming acquainted intimately with their habits, their likes and dislikes, learning what they need and what is bad for them.

Cheapness in production is the first point to be mastered by the beginner. In his breeding he should work for large litters, early maturity and quality.

Starting with one sow, it will pay to buy a mature one that has shown that she will produce good pigs and raise eight to ten at a litter. She should have two litters a year.

Cheap shelter can be made with straw, sod or boards. The beginner can watch his small lot of hogs carefully and learn how to make them grow rapidly at least expense.

If any trouble occurs it can usually be seen in a small lot of pigs before it is past curbing. When there is a loss it cannot be heavy and the grower gets his experience cheaply.

The second year three or four of the best sow pigs should be saved with their dam.

The third year the grower should have learned enough about growing hogs to be able to handle ten sows and their produce, and after that he should know enough to slowly increase his hog herd to the limit of his farm.

Cheap shelter and fences should be used until the profits from the hogs will pay for better ones. No large building should be erected until hogs have been grown several years on the farm and the breeder is sure of what he wants and where he needs to locate it.

Sows should be kept as long as they produce good litters. An old sow will usually have large pigs, a greater number and pigs with more vitality than an immature, growing sow.

Starting with one sow, she will be the foundation of the herd, no matter how large it may become. It will pay to have the first one a good one, even if she costs considerable money.—H. M. Cottrell, Superintendent Farmers' Institutes, Colorado Agricultural College, Fort Collins.

The Soil a Great Storage Battery

A LITTLE reflection will show that if all the plant food in the soil were immediately available it would have been leached out and carried to the sea ages before man came to inhabit the earth, except in those regions where the annual rainfall is less than the yearly evaporation; but as it is, this plant food is stored in such forms that it is only given up little by little, as each succeeding annual growth of vegetation has need of it, and to prevent the possibility of waste on most soils and under natural conditions the quantity thus yielded annually is less than the crops cultivated by man are capable of utilizing under the favorable conditions for growth which cultivation provides.

Some of the forms of food storage may be illustrated by the following examples: Orthoclase feldspar is a constituent of granite, and is one of the chief sources of clays; it is therefore a mineral of great abundance. This feldspar contains nearly fourteen per cent of potassium, or three times as much as wood ashes, but this potassium is held in such firm combination that feldspar has never yet been made a source of the potash used in human industry, multiple as are the uses of this substance and urgent as is the demand for a cheaper source of it.

Another illustration: Phosphorus is universally distributed through the soil, usually in combination with lime or iron; but when we attempt to use either of these combinations as a fertilizer without some treatment calculated to break up the combination and liberate the phosphorus we get practically no result. Immense beds of phosphate of lime are found in several of the Southern states, from which a large part of the phosphorus of manufactured fertilizers is drawn; but so necessary is treatment of this material, either with suitable chemicals or by incorporating it with fermenting manure or other organic matter, that without such treatment it is practically worthless as a fertilizer.

Again: Swamp muck or peat is rich in nitrogen, the air-dry material containing sometimes as much as two per cent or more of this element. But this substance is the result of the growth of plants which live where their roots are constantly submerged, and it has acquired such resistance to the ordinary agents of decay that until this resistance is overcome by proper treatment the nitrogen of peat is held in almost as firm a grip as the potassium of feldspar or the phosphorus of the Southern rocks.—Ohio Station Circular No. 79.

Let Nature Fill the Gullies

ON MANY farms there are deep gullies, and also little gullies which in a few years will wash out into deep ones. In the lower Mississippi Valley, Eads discovered how, by his sunken jetties, to use the same water force which created shallows and bars in dissipating and destroying them. So, in gullies, the same force which creates them can be turned to account to fill them up. To accomplish this engineering feat it is only necessary to have cedar or pine boughs or brush. The brush should be laid in the gullies "against the current"—that is, with the butts pointing toward the lower end of the gully. Freshets of water will not wash them away, as would be the case did their limbs trend with the flow of the water; but, on the contrary, earth will be washed and lodge wherever there is an acute angle formed by a crotch, and the gullies will gradually fill up, until in a couple or three seasons only a gentle depression will remain, which can easily be leveled, if desired, with the plow. This brushing gullies is good winter work. A few loads of fire-wood trimmings can be distributed about on most farms to good advantage. The remedial work need not, however, be confined to the little gullies. Big ones, almost ravines, can be filled in this way.—G. E. Mitchell in *The American Cultivator*.

Listing for Wheat

I THINK it was sixteen years ago that I first listed land for wheat, and continued same as long as I grew wheat, which I think was seven years. I would not have a man plow my land if he would plow it free.

For the benefit of those that have land suitable, I will give my method. As soon as the present crop is removed, start the

lister without subsoiler, providing the ground is in fit condition for plowing. Go around the field the same as you intend to harvest, running the lister closer than you would for corn. Be sure to cover the center of the ridges well. Then, after volunteer wheat is well started, go on with a harrow, going around the same way as listing. Next go on with a disk, curler with shovels, or cultivator with two large shovels. Then with one or two more good harrowings your field is ready for the drill, and if the work has been well done you will have an ideal seed bed. The soil will be fine on top and firm underneath. I make the following claims for listing: First, by going over ground more rapid and stopping weed growth by listing there is more surface exposed to the action of the atmosphere. Second, there will be no dead furrows or ridges around the field. Third, the stubble and trash will be on top of the land, where it will have a tendency to catch snow and stop surface soil from drifting.—W. B. Eames in *The Kansas Farmer*.

Growing Hogs on Clover

ON ACCOUNT of the high price of corn many farmers have concluded that it is too expensive to feed, and are undertaking to grow pigs on clover without grain. In the alfalfa sections that is used instead of clover. We fear they will be considerably disappointed with the results of this experiment.

Agricultural papers have said so much in praise of clover and alfalfa that farmers are apt to conclude that they will take the place of grain, when hogs can be grown profitably on clover or alfalfa alone. A little consideration will show any man that the hog is not altogether a grazing animal. Its stomach is too small to utilize grass except as a relish or supplement to grain feed. The fact is that it cannot eat enough of either clover or alfalfa to make a rapid, thrifty or profitable growth.

Clover and alfalfa will furnish a maintenance ration, and that is about all. We have seen pigs by the hundreds grown on alfalfa, but we have never seen any that showed any great evidence of thrift unless fed more or less of a corn ration. It is true that brood sows after their pigs are weaned will make a gain sometimes of half a pound a day on alfalfa alone. Pigs after weaning will grow in frame on either alfalfa or clover, but what they gain in frame they are apt to lose in flesh, and the growth must necessarily be a slow one. It is possible to grow very decent pigs on alfalfa alone, but it takes a long time to do it, and if corn is anything less than seventy-five cents a bushel it will pay to feed it in small amounts to hogs.—Wallaces' Farmer.

Plant Food Required by Crops

IT SHOULD be remembered that of the ten different chemical elements required for the growth of agricultural plants, three come directly from air and water in practically unlimited amounts (except in time of drought), and that these three—carbon, hydrogen and oxygen—constitute as a rule about ninety-five per cent of the mature crop. Nevertheless, each of the seven elements obtained from the soil, though aggregating only five per cent, is just as necessary to the life and full development of the plant as are these three.

The four elements—sulphur, calcium, iron and magnesium—are required by crops in such small amounts and are present in nearly all soils in such large amounts that the supply rarely, if ever, becomes depleted, thus narrowing the problem essentially to three elements, constituting not more than four per cent of the average crop.

The productive capacity of practically all soils in good physical condition is measured by the available supply of the three plant-food elements—phosphorus, potassium and nitrogen—because they are required by all crops in very considerable quantities, while in most soils the supply of one or more of them is limited. If the supply of one of these elements is too limited, it must as a consequence limit the yield of the crop, even though all other factors essential to crop production are well provided. It is because of these facts that the three elements—phosphorus, potassium and nitrogen—in commercial form have come to have a recognized money value.—Illinois Station Bulletin No. 123.

Gardening

By T. Greiner

Luscious Strawberries

IT WAS a late spring this year. Tree bloom was weeks behind the usual time. Yet our strawberries caught up, and we had ripe ones just as early as we ever had them, with the exception of just one year, when we had ripe Michel's Early the last day of May.

This Michel is not a particularly good, firm or sweet berry, nor very large or very productive, but it is early. This is really our only justification in retaining it. It makes an immoderate number of runners. If we set a few plants far enough apart, say four feet in the row, and the rows four feet apart, we can cover a big patch of ground with a complete tangle of plants. This is the proper way to grow it. It takes a matted row to give us anything like quantity.

In the newer Fairfield we have a larger, firmer, higher-colored and generally better berry. Indeed, it is very firm, very dark, sweet and of good size. It is a fairly good producer of runners, but cannot compare with the Michel in this respect. It seems to ripen about with Michel, and we get nice berries for the table; but we should let it get fully ripe. As long as the tip end remains white or green the berry is not ripe enough, no matter how well colored the rest of the berry may be. When colored clear to the tip, the color being indeed very dark, the quality of the berry is very good, notwithstanding its tendency to have a hard core.

We cannot have strawberries too early in the season. Therefore we must have one or the other of these first-early sorts. I advise my friends to try the Fairfield, by all means. Next we need a mid-season berry. My favorite is still the Brandywine, a very thrifty plant and a free producer of extra-large, high-colored, firm and sweet berries. I know of nothing better for its season. I also have the old Wilson and the old Crescent. These are a little later than Michel or Fairfield, and a little earlier than Brandywine. We had ripe Crescents about June 8th or 10th, and ripe Wilsons June 10th or 12th. The Crescent especially is "the lazy man's berry." It makes runners freely, and produces a fair crop of medium-large, medium-firm and medium-quality berries, but it needs a perfect-flowering sort, like the Wilson, near it to make it fruitful. These sorts give us quantity until the Brandywine gives a full supply. After that comes the Gandy, the latest sort we have, and a good and profitable one.

Bean Weevil

E. M. P., an Oklahoma reader, writes me as follows: "Perhaps you do not believe in planting by signs, but if you will plant beans during the full moon in June, there will be no weevils in them."

I do believe in signs, but I look on our own ground rather than to the moon for them. We plant beans some time in June. We are not particularly troubled with weevils, and do not intend to be. If we plant during full moon in June we have no weevils, and we have none if we plant during any other phase of the moon so long as we take pains to plant seed beans that are absolutely free from weevils.

All beans, as well as peas, intended for planting should be treated by exposure to the fumes of bisulphide of carbon soon after being harvested. This treatment kills the larvae in them and puts a stop to their propagation next year. The best signs for the gardener, therefore, to insure success in bean growing, are good, well-prepared soil, proper season, the soil being warm and just moist, not wet, good seed free from infection and weevils, and good cultivation.

The Mole Question

A "Missourian" takes no stock in this talk of moles living only on insect food and refusing to eat corn. Why all these preventive devices of using kerosene or tar, sulphur, etc., on seed corn? He knows the mole is in his garden and fields and does much damage; but a good rat dog, he says, or a good spring trap are about the only sure remedies he knows of. He is pretty near right in this.

Any one can easily settle the question as to what the mole lives on for himself. Catch a mole and confine it in a box or crock partly filled with soil. Give it corn—sweet or field, soaked or dry—for a while. You will find the corn untouched, and if you keep the animal on

that diet long enough you will surely starve it to death; but furnish it with earthworms, grubs, etc., and see how greedily it will take that kind of food. That ought to be convincing; but there are people whom the faculties of all the colleges in the world could not convince that it makes no difference whether potatoes or radishes are planted in the growing or in the waning moon, that moles do not live on corn. A good trap is all right for the mole, anyway!

For Vine Enemies

The following comes from an Illinois reader: "For the striped bug on watermelons, muskmelons, cucumbers, squashes and pumpkins there is nothing equal to plaster Paris (sulphate of lime). When sifted on the plants or vines the bugs leave at once. Generally one application is all that is necessary. It should be put on when the vines are dry. Plaster Paris is non-poisonous and will not hurt anything or anybody but the bugs."

Common land plaster, which also is a lime sulphate, is often used as an application on such vines for the striped beetle, and when the latter is not present in excessive numbers, usually proves effective as a repeller. The beetles leave, but if they are very numerous and very hungry, they will soon return to the plants and perhaps do a good deal of damage. I prefer to trust in arsenite of lime.

Remedy for Cabbage Worms

"Do you know a remedy for cabbage worms?" asks an Illinois reader. The trouble is, I know of so many that I am often at a loss what to recommend. One way is to grow cabbages in so large blocks that there are five or more cabbages for every worm. Then we will not notice them much. Usually in a ten-acre field it is only a few of the outside rows on which the butterflies will deposit their eggs. In small patches, however, it must be a vigorous fight, or the worms are liable to spoil the whole crop. When you can get fresh insect powder, especially what is known as "buhach," you have plain sailing. When you go into the garden, carry along a little powder bellows loaded with such insect powder, either in full strength or mixed with flour, lime, etc., and go along the cabbage rows, giving a good puff or two into each head. That will settle Mr. Cabbage Worm. If such insect powder is not at hand, dash hot water or soapsuds into and over the heads. That will help. Kerosene emulsion and tobacco tea (made by soaking or boiling tobacco stems or other refuse in water) sprayed over the heads are good remedies.

Sal Soda or Lime?

A California reader wants my formula for making Bordeaux with sal soda, claiming that I believe it is better than that made with lime. I will say that I use lime when I have it on hand fresh, and use enough of it with the copper sulphate to satisfy the often-mentioned "yellow prussiate of potash" test; but when fresh lime is not at hand, I do not hesitate to use sal soda. The proportions are one and one fourth pounds to one pound of copper sulphate. Each ingredient is dissolved in about five gallons of water and the two liquids then poured together into a third vessel. The addition of a little lime may be of benefit, and as a dose for "bugs" I add half a pound or a pound of arsenate of lead paste, previously well dissolved.

Drying Prunes

A reader asks whether there is any way to preserve plums in the same manner as the prunes of the stores. You cannot make dried prunes out of plums. The prune of the stores is the German or Turkish prune, probably grown in California. From my boyhood days in Germany I remember the great crops of "German prunes" we used to grow in our garden just outside the city. My mother always dried a lot of them, and I believe they were as good as the prunes purchased.

Native Nuts

Much has been said and written about nut culture and about our native nuts and their improvement. The horticultural societies (American Pomological and various state horticultural organizations) have given some attention to the matter, but I am not aware of great systematic efforts being made to "select, propagate and improve our native nuts."

Fruit Growing

By Samuel B. Green

Fall Planting

A SUBSCRIBER asks as to the merits of autumn planting. In a general way the best time for the average person to do planting is in the spring, since the work is most certain at that time of year. However, in some sections of the country, notably in portions of New York and further south, autumn planting may be done to good advantage, and in some of the Southern states autumn and winter planting is far preferable to later planting.

The most common source of injury to autumn-planted nursery stock comes from lack of firming the soil solidly about its roots, which neglect permits it to be blown about and injured. In the case of autumn-planted trees it is also a good plan to tie them to stakes, staking them in such a way that the trees will not be injured by rubbing against the stakes.

Only the hardiest kinds of plants should be set out in autumn. As a rule, if carefully planted out, such plants as the currant, gooseberry, red raspberry, and pie plant, peonies, hardiest shrubs, etc., are better when planted in autumn than in spring, for they often have sprouted when set out in the spring, and do not make so good a growth as when properly planted in autumn. However, in the case of these plants, it is well to remember the importance of firming the roots thoroughly and also banking them up with a little dirt, and perhaps covering with mulch at the Far North.

Blackcap raspberries and strawberries can seldom be planted to advantage in autumn, and yet I have occasionally done so to good advantage when we had moist, good weather in autumn. In Minnesota it is the practise of some of the best horticulturists to plant their apple and plum trees in the autumn, and after planting lay them flat on the ground and cover with soil to the depth of perhaps six inches, and later on put a little mulch over the root and stake at the top, so that it can be easily found in the spring. Autumn planting in this way is rather expensive, and yet it permits of the work being safely done at a time when there is plenty of opportunity. In the case of strawberries which are planted in autumn, a practise not generally to be recommended, but which may sometimes be followed to advantage, it is a good plan to cover the plants with three or four inches of soil and a little mulch. In the spring of the year this soil may be raked from over the plants, and then they are ready to go on and grow, and even produce some little fruit the following year. I generally recommend such treatment with strawberries in the case of parties who desire some fruit for their own use, and have neglected to plant in the spring or late autumn.

The hardiest kinds of forest tree seedlings may be safely planted in autumn if firmed in solidly and then banked up with dirt. Willow, poplar and other cuttings may be set in autumn if the tops are covered with soil and mulched. It is generally best to plant out as soon as the plants are well ripened, provided the land is in good shape. In the case of currants and peonies the work may be best done in September, or even in late August. Willow and poplar cuttings may be planted as late as the ground can be worked, but best results are most certain from earlier planting.

Change of Occupation

J. B. C., Dublin, Georgia—Success in any occupation is so much a personal matter that I always hesitate about advising in regard to it, and the proposition that you present is difficult to answer in a helpful way. However, a few thoughts along this line may interest you.

For a rural occupation such as you suggest it is important to locate in some section where there is considerable money. I am inclined to think that a very desirable location for you would be some place along the Hudson River, say not more than fifty miles from New York. In this section you have good soil for fruit, good markets, and both water and rail transportation; and with good neighbors who are progressive and prosperous people. The climate is healthful, and I take it, adapted to your family. These are all important factors for you to consider.

Probably there is no section of this country that is better adapted to the growth of Northern fruits than parts of the Pacific Northwest, and there are many prosperous locations where you might do

well; on the other hand, it is a good ways from your friends and from good markets, but in the best fruit-growing sections there they have organizations which care for their produce in good shape, and the fruit growers in these sections are up to date, grow good fruit and are prosperous. I have no doubt but that you could succeed there if you have the elements of success in you. I think also that it is possible for you to succeed in Georgia; but as you do not like the climate, I would suggest that the sooner you can get into a climate that you do like, the better it would be for you and your family.

In a thickly settled section, like that about New York, Boston or Philadelphia or other of the large cities, the chances of success for the skilful man of small means is better than in parts remote from market. I have said nothing as to the amount of money you could make at gardening, fruit growing or chicken raising, but it seems to me that you might do well; however, you must remember that it will take some considerable experience to get a little business of this kind onto a prosperous footing.

Cider from Cantaloupes—Weak Plum and Pear Trees

M. A., Clarendon, Texas—I have never known of cider being made from cantaloupes, but can readily understand how some kind of fermented liquor could be made from them. I doubt if there is sufficient sugar in the juice of the average cantaloup to make a good-keeping cider. The juice of cantaloupes could undoubtedly be made into vinegar, but might require some fortifying in order to get it up to the standard required by the pure-food laws. This could be done by adding sugar.

Plum and pear trees that are not growing well, and yet do not appear to be especially weak, should receive careful cultivation of the soil and manuring. The amount of manure to use will depend upon what is available. If the ordinary barnyard manure is to be used, it should be applied at the rate of about ten cords to the acre. It is generally best to apply this in the spring of the year and plow it in; it may also be applied during the summer, but not toward the end of the season, as at that time it is apt to encourage a late growth.

Autumn Planting of Strawberries

H. A. K., Murray, North Dakota—Replying to your query, I have sometimes planted strawberries in autumn to good advantage. If the plants can be obtained well rooted in August, and the land is in good condition for planting, the work can be done at that time to good advantage; but it is a poor time of the year to ship strawberry plants unless they are potted. If they are rooted in pots, they can be shipped in August, and planted out, but careful attention must be taken to have them started well.

If it is merely a matter of transplanting from your old beds, a good way to do is to take up the plants with a piece of round pipe, like a stovepipe, or on a spade, and take with them a ball of earth.

I would not recommend commercial planting for August or autumn months, but for home use in a small way I think it may often be practised to good advantage. Such plants should be covered in winter with perhaps two inches of soil and several inches of mulch on the approach of severely cold weather. In your section in winter when the ground is bare of snow six inches of solid straw covering is none too much to prevent winter injury of strawberry beds.

Summer Pruning of Fruit Trees

J. H. W., Etna Mills, California—You state that last spring your fruit trees were trimmed back severely and sprayed for scale, and now there are a number of new shoots beginning to grow, and you ask if these should be thinned out now or left until pruning time. In a general way I always prefer to remove surplus branches as soon as I find them. In the case of trees that are severely trimmed back, sprouts will come in many places where they are not desired, and it is a good plan to rub them off with the hand just as the buds are pushing out of the trees, and in this way force the strength of the tree into the most valuable wood. There is no objection to cutting off these surplus shoots after they are larger.

Live Stock and Dairy

High Prices of Hogs

THE high prices that have prevailed in the hog market during the past summer will influence a good many farmers to go into that branch of the business a little more extensively; in fact, there is little doubt that the business will soon see an extreme in prices, due very largely to a general rushing into the production of hogs.

Some forethought need not be dubbed the "pouring of cold water" on any real enterprise that may prompt the hog breeder to increase his stock; but last fall the unusually low prices of hogs led many to neglect the business, so that the men who now receive good prices are merely those whose settled policy and foresight led them to know that the hog business was not "down and out" at all, but simply experiencing one of those depressions that are more or less common to every industry.

The tendency of the balancing portion of American farmers is to try something new, to get out of a settled policy as soon as a light reverse strikes them. The going out of one business when the article is low in price, and the rush into another that is high, is almost invariably done at considerable loss financially; besides, the forsaking of a line of work that one is acquainted with, and the undertaking of something new, is very often followed by reverses resulting from ignorance of the dangers that underlie the new business, but which could not be foreseen by the beginner. In addition to this, the man who embarks on the high tide of any branch of farming cannot infer that this unusual prosperity will continue indefinitely; in fact, careful observation has indicated that such conditions attract so many followers that such lines are soon overdone and result in disastrous prices.

But to go back to the condition of the hog market, let us account still further for the present high price. Corn is scarce, so that good hogs cannot be produced; a promising corn crop is nearing harvest, therefore it would seem wise for the hog enthusiast to await developments of early fall. There is little doubt that a month of new corn will knock a big hole in the hog market; observation has taught the hog raiser to expect this.

Two years ago hog cholera was more prevalent than usual, and the business was more generally upset than for several years. As soon as breeding stock got in condition the business was resumed rather strongly all along the line, so that a large pig crop in 1907 had considerable to do with the depressed conditions last fall, and there was really more hogs than the country needed. The large pig crop, coupled with an unusually poor corn crop, paved the way for the present comparative corn famine that has helped to make the hog market attractive.

The present conditions might be still further analyzed to indicate that there is nothing in the present outlook to attract undue or unusual activities in hog raising on the part of beginners. The profits accruing from the "ups and downs" of the hog business and every other business are not harvested by beginners and novices who try to keep track of the pulse and go in and out at will; but the man who keeps ahead is he who stays in the business and intelligently modifies his activities to suit the supply and demand.

Ohio. GEO. P. WILLIAMS.

Handling the Brood Sow and Litter

IT WILL pay any farmer to keep a record of the dates on which his sows are bred, that he may know to a certainty just when the sows will farrow, and be prepared to take care of the litters.

A few days before a sow is due to farrow it is well to place her by herself in a warm, dry place, where she will not be molested, and feed her the same ration she has been accustomed to, as a change in her feed at this time would be likely to upset her or derange her system. When she farrows it is best to let her alone until she comes out, and then give her only a drink of water. When she again comes out, give her another drink and put a very little feed in it.

It is important to be very careful that she is brought to a full feed gradually, in order that she may not produce too great a flow of milk before the pigs are able to take it. It must be remembered that this is certainly the most critical period in the life of the young litter, as a little too much milk from the sow at first is almost sure to bring about the disease known as white scours, which if not checked at once will soon cause death. There is also

danger, by starting the milk flow too soon, in causing the sow to become feverish, when her udder will become hard and hot, and soreness will result, so that the sow will not let her litter suckle. This all tends either to kill the pigs or so stunt them that they will not grow as fast as they otherwise would.

After the pigs have gotten well started, say from a week to ten days, the sow may be fed all she will eat of a good ration, but under no circumstances is it best to make any change in her feed, as bad results are apt to follow. When the pigs are about three weeks old they will show an inclination to eat; at this time they should be given a little of the same feed that the sow is receiving, and if to be had, a small quantity of milk may be added. This side table must be placed where the mother cannot get to it, and the pigs given but a very little at a time, and under no consideration should any be left in their trough to sour. Sour or stale feed is an abomination that should never be tolerated.

One of the first grains a little pig will eat is shelled corn, and if a handful is thrown on the floor or ground they will soon clean it up. The trough that is prepared for the pigs should be extremely shallow, so that they may eat without having to get into it.

Started gradually in this manner, the pigs can be grown very rapidly. If any changes in the feed must be made, they should be made gradually. At the age of three months they may be weaned by removing the sow from the yard or lot where she and her litter have been, and the pigs will hardly know when they are weaned. If one wishes to wean at an earlier age, it may be done; but if the sow is a good milker, it must be done gradually—by removing the sow for a part of the day at first, then after a day or two she may be kept away for a whole day, and after a little all the time, until there is no danger of a caked udder and spoiled teats.

After weaning, the pigs should be kept growing as fast as possible by giving them good feed and plenty of exercise. If one has the milk, it would be well to mix the ground feed in it; if not, an addition of the five to ten per cent tankage will grow them about as well, and make just as large a pig for the age as if fed milk, and at little expense. It is best to mix the feed quite thickly. Pigs that are fed too thin slop have to drink too much to get what real feed they need.

As the pigs grow older, a little whole corn may be given them. In fact, a variety of feed is always best at this age; but all changes must be made carefully, so as not to upset their systems or check their growth.

Pigs properly fed and well bred should easily weigh one hundred pounds at three months of age, and at six months should weigh from two hundred to two hundred and twenty-five pounds each, and be ready to top any market at eight months of age at a weight of two hundred and fifty pounds or more.

W. HANSON.

Uncomfortable Stanchions

NOR long since I was taking a few weeks vacation with a farmer friend who keeps a few cows on his place. He has them stabled most of the time, letting them out in the yard only for a few hours each afternoon. He secures them at the manger by an ordinary home-made stanchion. What drew my attention to this method of securing cattle was, the moment they were let out they were wild in hunting places where they could rub and scratch themselves, acting as if they were itchy and were seeking relief by rubbing against posts, fences, etc. Quenching their thirst at the watering trough was a secondary matter with them. This itchiness must be relieved first.

It occurred to me that this was the result of the kind of stanchion my friend used, the cattle being unable to relieve themselves with their heads in the stocks—for that is what it is, a place of torture. Now, if one would stop to think for a moment one would know that such a feeling must be very disagreeable to the animals, making them nervous and fretful, and if they are milch cows, would surely decrease their milk flow. Stock of all kind, to do their best, must not only have proper food, but must be kept comfortable and contented as well, especially the milch cows.

There are stanchions made to revolve on pivots, allowing cattle their freedom to turn their heads to either side, but to my mind there is no better way of securing stock than by the old method of rope and spring.

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Team Adjustment

MR. FRED W. CARD asked for views on team adjustment in June 25th FARM AND FIRESIDE.

In this section (Harford County, Maryland) we find that on a farm planting annually about twenty to twenty-five acres to corn, ten or twelve to oats, twenty or thirty to wheat and various amounts to potatoes, cow peas, millet, etc., with from forty to fifty acres for hay, five horses or mules and three men are required for easy and economical handling of crops.

In the spring four horses and two men are kept pretty busy at plowing, harrowing, etc. The other man and horse are kept busy with small jobs that must be attended to. Under ordinary conditions this allows us to plant our crops in good time.

During the time before wheat, hay and oats harvest we run two double cultivators as regularly as we can, occasionally using the other horse for single cultivator where it is necessary.

In wheat harvest one man and three horses run the binder, and two men and the other two horses run the wagon and follow immediately after the machine.

If possible, we get another man to bunch the sheaves and help in the barn or barrack.

In hay harvest we find constant employment for all the men and horses without much planning; and so it is in oats. After oats harvest there is enough cultivating, hauling manure and plowing for and seeding grass and wheat to keep everything busy.

During the time we are cutting corn (which we do here by hand mostly) we always have enough heavy hauling saved back for the full team and one man, while the others are in the corn field.

Then the corn is husked and lofted, and the fodder hauled and stacked or put in the barn or barrack, and so we keep all busy until everything is ready for winter.

In winter we do not need much help, and the team is idle a large part of the time, as is usually the case on a farm.

E. A. W.

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CALIFORNIA

Live Stock and Dairy

The Points of a Good Horse

To sum up briefly the points of a horse, he must be well balanced in every respect. The head should be of suitable size and character, with the jaws, at the coupling with the neck, wide and clean; the neck light, yet not weak, and reasonably arched; the withers well raised, but not excessively high, the top of the croup nearly at the same level as the withers; the back, between withers and croup, short, and neither hollow (swing backed) nor arched (roach backed); the body deep, with well-rounded ribs, well ribbed up, and reasonably let down without being over full at the abdomen; the shoulders well sloped backward, and the croup not drooping excessively and not round at the rump; the muscular parts of the limbs down to knees and hocks should be long and well developed, while the shank bones should be short and clean; the pasterns should be suitable to the class of horse, moderate length and reasonable slope; the joints should be large and prominent, affording good bearings for work and good attachments for the muscles; the feet are most important—they should be well shaped, open, and tough in the horn, with a clean, healthy sole and well-developed frog; the limbs should be straight and truly set, and the horse should stand on all four feet without unduly favoring any of them.

There are many breeds of horses in the States. The light breeds include the thoroughbred, the hackney and the various breeds of ponies. The heavy breeds include the Clydesdale, the Shire and the Percheron. Although the thoroughbred cannot be called a farmer's horse, it has a considerable interest for the farmer in the production of half-bred horses. The cross of the thoroughbred introduces what is popularly called "blood" into common horses. It gives them dash, speed, courage and staying power. On the other hand, this cross refines them to such an extent that they lose in substance and are apt to become weedy. Hunters and road horses owe a good deal of their character to the thoroughbred influence in their blood. Thus, to the breeder of horses, the thoroughbred has its special importance. For farm work the thoroughbred is an undesirable cross, reducing the weight of the horse for collar work, and making him too impetuous and unsteady.

The general appearance of the thoroughbred horse is one of lightness and grace, giving the impression of speed without great strength. On close examination of a high-class thoroughbred horse the lightness will be found to be confined to the

bony frame, while the muscles are relatively much more developed than in plain horses. Thus, with all his lightness, the thoroughbred is really a very powerful horse. His great muscular development and his superior brain capacity and nervous energy all conduce to fit him to take part in all work which does not include heavy draft. Unfortunately, there are innumerable exceptions to this high standard. The thoroughbred has been produced primarily for racing, and speed has been more of a desideratum than stamina. Besides, a system of inbreeding, or breeding from closely related animals, has been practised to excess. As a result, very many thoroughbreds fall short of what they might be. They are not only weak and weedy in build, but they are often unsound in constitution and limb. Thoroughbred horses of this inferior class have done incalculable harm to horse-breeding interests when crossed with farmers' mares. When they have done their racing they are fit for nothing else, and these are the sires that many farmers patronize because they are cheap. When the production of light horses for sale involves rearing and keeping the colt on the farm until four years old, the service fee is a very small part of the cost. The horse that covers at a low fee may produce a colt that will sell at a very moderate figure, and there is just a possibility that the colt will not be salable at all, while the good-class horse will produce one that is reasonably certain to sell at a good figure. On account of these considerations, the horse breeder will find it a good investment to pay a reasonable service fee when the stallion is known to be a good one.

The hackney horse is quite different in appearance from the thoroughbred. The thoroughbred is intended for galloping, while the hackney is for trotting. These are the horses which show such wonderful knee-and-hock action when in motion. Compared with the thoroughbred, the hackney is much more solid in appearance. Comparatively few hackneys have a really refined appearance. The nostrils are frequently small, the jaws not particularly wide, the throat rather full, the joints less developed than the thoroughbred, and the hoofs comparatively large. Hackneys are broad in the chest, and occasionally they are thick in the shoulder muscles. More often than not they are round in the rump. The saving feature of this breed is that, as a whole, they are much sounder in wind and limb than thoroughbreds. Still the majority of them have a soft spot in them, which leaves them very short of staying power. They start off with a wonderful dash and style, but it is a matter of universal experience that they cannot keep it up. In this respect they

are vastly inferior to thoroughbreds. Still there is a fine market for harness horses with showy action, and the hackney is the breed that is particularly suited to meet the demand. W. R. GILBERT.

Feeding Cattle for the Beginner

AT THIS season of the year a lot of young feeding cattle are changing hands, and a few words of discussion may be appreciated by those who are buying feeders for the first time. Money can be made or lost without much credit or blame for the buyer in many cases; markets vacillate a good deal, and the quality of the animals vary widely.

The question arises, "Where shall one buy the cattle?" There is little doubt that the West furnishes the most uniform material, but a good deal has been talked recently about "stuffing" cattle, so that the initial weight is too heavy. Still the older buyers can give the beginner many profitable suggestions for avoiding such cattle.

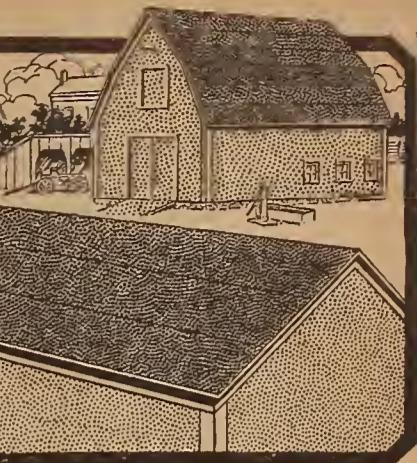
Buying at the Eastern markets is not so uniformly satisfactory, as both breeding and feeding are less uniform. As a rule promising young cattle are retained at home, and the scrubs of the herd are sent to market. One is very likely to get the "three-year-old yearling" in almost any bunch, and often a good many such. We have sent off a few such cattle several months after buying, and have found the weights no heavier, and occasionally lighter.

Buying locally is a good practise for the beginner; then he can see the animal before buying, and can examine the herd from which he comes. A little care in buying is generally just as important as the feed.

Our advice to the cautious beginner is not to be rash or in a hurry; see the goods yourself; be on a watch for bargains the first time—that is, something good at a price that makes one comparatively safe. GEO. P. WILLIAMS.

Fleas

DUSTY sheds or bedding places of hogs are usually, though not always, infested with fleas. The dogs and cats pack them to the house, and they get into the carpet, then the beds. Some persons they do not bother, while for others they are one of the worst torments. To the latter the expression "the fleas just liked to eat me up" has a meaning indeed. Dust the dog with insect powder, and with air-slaked lime whiten the hogs' beds and all other dusty places where you suspect the fleas are making themselves at home. Crude carbolic acid diluted with water and sprinkled about is also good to drive the fleas away. OMER R. ABRAHAM.



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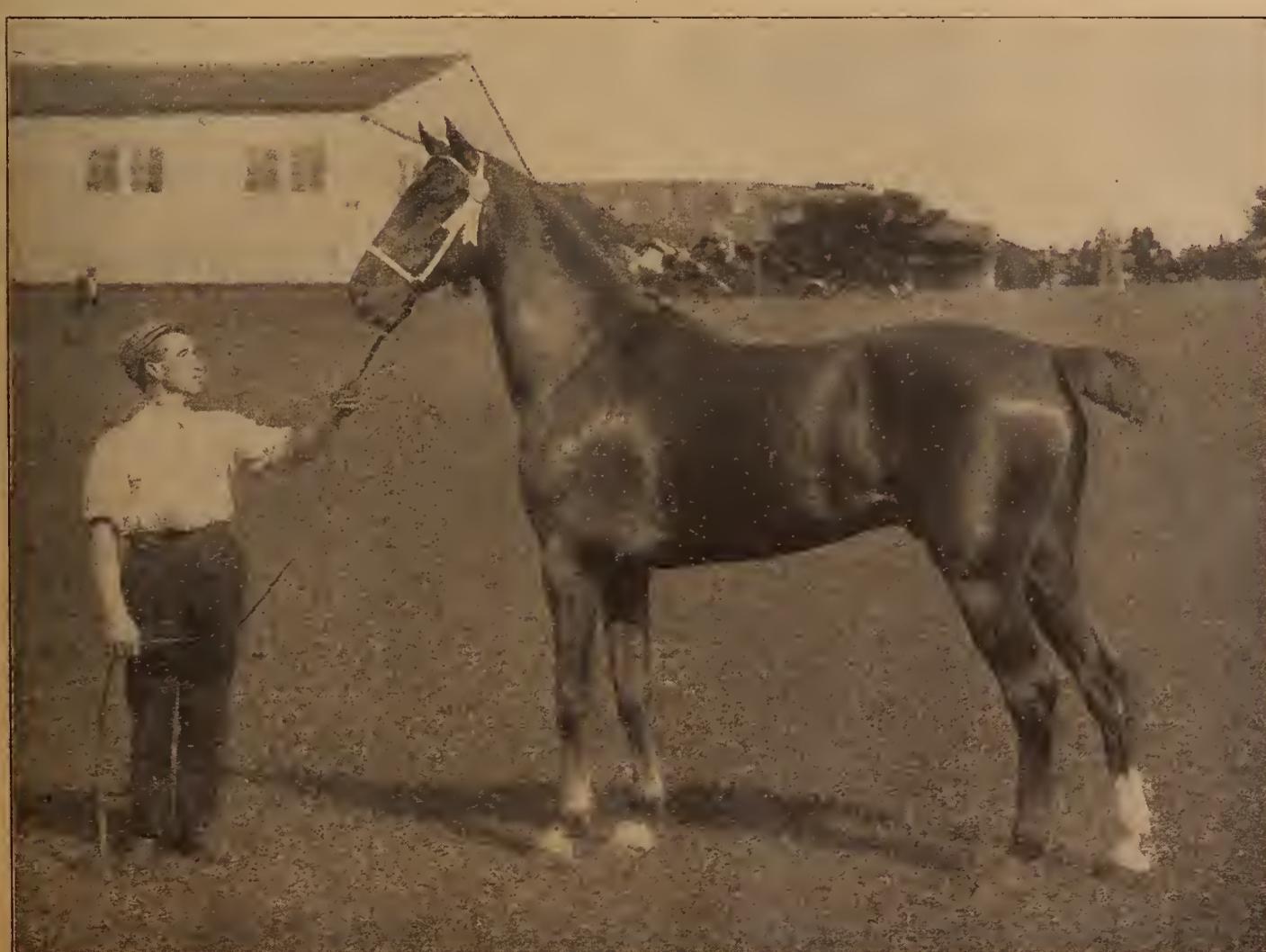
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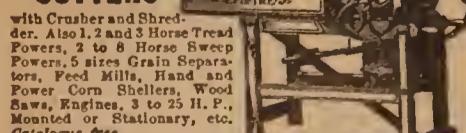
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Farm Notes

Growing Winter Wheat

IT is an impossibility, owing to diversity of soil and other conditions, to lay down any set of rules or prescribe any definite plan of growing winter wheat under all conditions, but it is possible to offer some suggestions learned from experience that may aid the inexperienced to grow a better crop of this cereal.

Among the essential factors in profitable wheat production which we are able to control are the good drainage, keeping up the humus supply of the soil, careful tillage, rational crop rotations, and proper nourishment of the growing crop from start to finish.

Drainage must be from below, either through carefully laid systems of under-drains or through a naturally open subsoil. The surplus water must all be quickly drained out of the soil, in order to reduce winter killing.

A soil well supplied with humus permits better drainage, does not dry out so readily, makes manure or fertilizers more effective, and reduces the danger of winter killing of the wheat plants.

Cover crops or inter crops such as rye, cow peas and clover grown upon the land after the main crop for the year has been removed, and plowed under in the fall or following spring for the ensuing crop, can often be used to excellent advantage in providing humus.

Preparing the Soil for Crops

The value of careful tillage cannot be overestimated. I have grown wheat for a number of years, and have found that the soil for this crop, in addition to being deeply and finely prepared, must be considerably more compact than for most crops. I find that wheat requires a firm root bed, and only the soil required to cover the seed should be loose. Wheat is more apt to winter kill if sown on soil that is loose to any great depth. The reason for this is that in the loose root bed the roots go straight down, and if there is any heaving of the soil, they are easily broken; while in a firm root bed the young roots grow in a more horizontal position near the surface, and the heaving of the soil does not disturb them, as they easily rise and fall with it.

In plowing for wheat I follow each day's plowing with a roller and harrow. This works the surface of the soil down level and forms a dust mulch, to prevent the escape of moisture. I follow the plow with a roller and harrow even when the soil breaks up dry and cloddy. By working the ground this way when dry it is put in condition to receive the rainfall and conserve the moisture for the wheat crop.

I keep up a dust mulch, to conserve the moisture after the ground has been plowed, by continuing to harrow it after every rain that is heavy enough to form a crust on top. This also keeps down grass and weeds. The soil is thoroughly compacted beneath by keeping up this harrowing until time to sow the seed, while an inch or two on top is put in good condition for the reception of the seed.

Sow Wheat One Inch Deep

This frequent cultivation gets the field worked down smoothly and makes it possible to drill the seed in very shallow and uniform. It has been my experience that the best results will be obtained if the wheat is covered shallow. One inch is sufficiently deep if the seed bed is in proper condition and contains plenty of moisture. The plants will make a quicker and stronger growth when the seed is covered shallow than when it is covered deep.

No definite dates can be fixed for sowing wheat. It depends upon the climate, kind and condition of soil and attacks of injurious insects, such as the Hessian fly. For average conditions, however, the best time to sow is after the twentieth of September. I am confident that some farmers sow too early.

As to seeding, drilling is better than broadcasting. By the use of the drill the seed is more uniformly covered and the drill rows afford better protection for the wheat during the winter.

The kind of seed to sow depends on the soil. For loose black soil a stiff-strawed variety is best, while on thin land a limber-strawed variety is very good. Among the most promising varieties of wheat at the present time are Winter King, Rudy, Farmers' Friend, Mealy and Tennessee Fultz.

As soon as the soil becomes sufficiently dry to work after a rain I sow my wheat, and seldom fail in getting a perfect stand. I thoroughly harrow the seed bed to a depth of about two inches just in front

of the drill. I am very careful to sow seed of the best quality, and always use home-grown seed of a variety that succeeds well in my locality. I have found that it does not pay to sow seed that is brought from a distance or to sow an entire crop of new varieties. I thoroughly clean the seed before sowing by running it through a fanning mill. Thus all weed seed and small, faulty grains are removed.

I usually sow about one and one half bushels to the acre on soil that is moderately fertile, but the amount is varied some, according to the fertility of the soil. On rich bottom land it is not necessary to sow so much, but on thin land it is better to sow thicker.

Illinois. W. M. H. UNDERWOOD.

The Small Farm

IN Oregon anything less than one hundred and sixty acres is considered a small farm. The time was when six hundred and forty acres was the usual-sized farm. They were the original donation land claims given to the early pioneers for their hardships encountered in settling up the frontier. Many of these old claims are still intact, and acres have been added to them until there are farms of several thousand acres lying in a body practically unimproved. Their owners in many instances are harassed to keep the taxes paid on them.

But the day of the large farm is passing, and it is being demonstrated by hundreds of home makers on five, ten, twenty and forty acre tracts that more money is made on the small farm than on large holdings, either by dairying and swine raising, growing orchards and small fruits, poultry raising or gardening.

Many of the large farms in the Willamette Valley that were formerly grain farms have been divided into small farms, and by diversified and intensive farming these small farms bring in as great an income separately as the large farm when all together, besides making a home for as many different families.

With the coming of the small farm has come the fruit canneries, which make a good market for all fruits and vegetables that are canned.

Dairying on the Small Farms

Dairying and swine raising go hand in hand. The products of this industry amounted to seventeen million dollars in the state last year. The people have taken up this work on the small farm. A farmer who has a thousand or two thousand acres to look after has not time to milk cows. And when it comes to hiring help, it hardly ever turns out profitably to the farmer. Dairying has been a great benefit to the farmers who have taken it up. They get the money for their products every month. They have the cash to buy with, and are privileged to buy where they can do the best with their money.

The man with the small farm can give his time and attention to the soil and raise that crop on it for which it is best adapted, and gets the very best returns for his labor. Farming has become a science instead of the haphazard way it used to be carried on.

The small farms are better for the community and the country at large and are more conducive to all manner of progress.

Communities Versus Isolated Farms

Young people generally do not enjoy being isolated on a large farm miles from a town or perhaps a neighbor. One has but one life to live, and what pleasure and companionship one has from the society of friends and acquaintances as they pass along through life, adds greatly to the cheer. This isolation and loneliness is partly to blame for driving the boys and girls away from the farms to the cities. On the farm is nothing but work, without any amusement to relieve the monotony. "All work and no play makes Jack a dull boy," and this is just as true of grown people.

With many people in a community there can be good roads, schools, churches and conveniences that are dependent on a dense population, which makes life more attractive on the farm. Transportation facilities are increased as a community increases the products to be disposed of. The demand for means of getting fruits and perishable products to market quickly is met with a hearty response from the railroad and steamship companies as soon as the production will warrant the extra expense.

The trend of the times is to make the farms smaller and to till them better.

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Poultry Raising

Raising Geese for Market

POMERANIA, in Prussia, is the largest goose-raising country in Germany, and most Germans are fond of geese. In Wisconsin Germans from Pomerania have large goose farms and make a very successful showing.

In our own United States the goose trade is very brisk at Thanksgiving, Christmas or New-Year's, for they break the monotony of turkey, turkey, turkey, or turkey, turkey, goose. In parts of Europe, however, the goose is more popular, and not only is it preferred to other fowls, but the livers are sent to Paris and other large cities, and the legs and breasts, after having been kept in brine for one week, are wrapped in paper, smoked, and sent to Paris, London, and even New York, where they are sold in the delicatessen shops at fancy prices.

The climate of western Washington is especially fine for goose raising, according to a rancher of that section, whom I now quote, for he has a very pretty ranch along the Satsop River, and has for many years been engaged in diversified farming, yet he has always kept geese for a hobby. When I asked him why, he smiled, and said, "They are very profitable, and besides, they are very good to eat."

"Geese," said this gentleman, "require first a building that is dry and well ventilated and supplied with good straw bedding. This will prevent sickness, and sores on the legs."

"Then in the spring, when the geese begin laying, build small bins, with gates, for each goose to nest in. Then shut her in the nest with one or two eggs for a day or two, and after that she will lay in no other nest, but every second day she will go to her own nest and lay,

until she has laid from fifteen to fifty eggs—the number depending somewhat upon the food she has had.

"The eggs spoil very quickly, so it is best to set them as soon as possible, even though it is necessary to use the chicken hen for this purpose, leaving the last eggs for the goose to sit upon.

"It is a good plan to hold every egg to the sunlight, large end upward, to test them before setting. If the egg is good, the upper portion will be red; if the egg is bad, the top will appear perfectly clear.

"In four weeks after setting, the goslings will be out. The hen often proves a better 'sitter' than the goose, and will lose fewer goslings.

"The season for setting lasts as long as there are eggs, and goslings hatched in July are ready for the Christmas market, while the earlier ones will go in for Thanksgiving.

"When the goslings are first hatched, feed them on good bread and wheat for about a week. When getting them ready for market, feed them on carrots for fourteen days, and then follow with fourteen days' feed of oats or barley. Barley is preferable, as it makes a firmer fat; but to make good, tasty meat, when apples are available, feed them all the windfalls they will eat, but no more.

"In summer, when grass is plentiful, no other feed is necessary, but in winter and spring feed carrots to stock geese.

"As to the size for market, a twenty-pound goose is all right, but many people prefer them from twelve to fifteen pounds, for they are not so rich as when grown to a larger size.

"Feeding should be stopped twenty-four hours before killing for market, as the goose will then keep much longer."

MORGAN J. EMERY.



Raising Geese for Market

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Items from the Coops

Lice will eat the profit right off your chicks.

A broiler should weigh at least two pounds. Stewers may run up to three.

That old rooster is a tyrant now. Get him fat and let him go to the market. Better off without him.

Haven't you one or two fowls that would do to go to the fair this fall? Get the blue ribbon if you can.

Hot water is good to settle with mites. It kills both the eggs and the mites that are already doing business.

Scrape up an acquaintance with your hens. The tame hen is the happiest, and happy hens bring in the dollars.

As the nights get colder, drive the young birds out of the trees and get them in the habit of roosting in the house.

Folks that have looked into it say a goose will make two hundred pounds of manure in a year. It is splendid for land, too.

Good time now to sell some of the cockrels. If they weigh a couple of pounds they should bring you thirty-five cents apiece.

Little chicks will not do a bit of harm in the garden. They pick up lots of bugs and things that are no good to the vegetables.

For the floor of the hen houses next winter nothing is better than dry leaves. Have a lot of them stored away against that time of need.

Have you ever tried hen manure about your flowers? Fine. And for garden purposes nothing can beat it. It is free from weed seeds.

How does whitewash help the hen house? It buries the mites and their eggs and keeps them from ever coming into that quarter again.

Boil up some of the little potatoes in the three-pail kettle, and mash them for the hens. Not a steady diet, but now and then. They go first rate.

Maybe those old hens will go through another winter all right, but you will not get much out of them. Let them go. It is the young hen that does the business.

Have your doubts about some of those old hens getting through winter, have you? Then don't risk it. Let them go right off as soon as they are in good flesh.

Not one man in a dozen knows the value of charcoal to his hens. If they would just try it once on a hen that gets run down and has that "tired feeling" they would always keep some on hand after that.

Do you know what makes chicks "crop bound?" Concentrated food with little grit will do it. Give some bran with your ration, and never fail to have grit where they can get it.

Don't think you can run out two or three times a day and fling out a little stuff for your hens to eat and let it go at that and rake in the dollars. Can't do it! Takes work, study and good common sense.

E. L. V.

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The Good-Roads Question

GETTING back to the good-roads question—you continually hear the remark, "It's one thing to want state-aid legislation and quite another thing to get it—with clean hands!"

That depends upon the way you make your approach. When you go out in the pasture to catch a colt, do you take a whip with you and begin shaking it the minute you're over the fence? Not to speak of! Neither do you go armed with a measure of oats, because the precedent is bad and it's inconvenient to carry oats—at least every time.

You simply go out to meet that colt in a quiet, businesslike way, without whip or oats, as if you expected the colt to expect to be caught without any shying or kicking. That kind of approach is the kind that is most likely to bring the colt to halter and establish the right sort of understanding from the start, without any false moves or bad education.

So with the legislator. If you make your approach by brandishing a club, he's going to shy and kick and lead you a dance all over the pasture. On the other hand, if you go to him with oats concealed about your person, he's going to do one of two things—send you back for plenty more (until he's satisfied that he's about emptied the bin) or else he's going to hand you a black eye for the insult. Which he will do will depend entirely upon which class of legislators he happens to belong to.

The Legislator's Point of View

But if you go to him as if you expected him to work for good-roads legislation because it is about the best thing you could possibly ask of him, and that, being a reasonable and discerning human being, he could not fail to understand this, and act accordingly, then you will meet him on the right ground and establish the right relationship.

Getting legislation for the benefit of the farming sections of the state is a decidedly different proposition from putting through measures for any other interest. This is the plain, cold fact of the case. For the sake of argument, grant that your legislature contains some men who are looking for "pork." Very likely they are much fewer in number than you imagine. Broadly speaking, our states have been sending cleaner, higher-class men to the legislature year after year. However, assume that there are a number of such men in your general assembly. Does that fact imply that you would need to resort to the "pork" variety of persuasion in order to get your measure passed? Of course you would not resort to it—but would it be necessary, provided you were willing to pay that price for it?

Not in the least! If every man in your general assembly had his hip pocket spread open to catch a slice of "pork" when he wasn't looking, this course would still remain as unnecessary as a refrigerator in Greenland and as wasteful as a French cook in a farm kitchen.

About the "Pork Barrels"

Why? Because nine tenths of the "pork barrels" are located in the cellars of the city interests, and are opened up for the benefit of legislation affecting the larger centers of population. And the men who engineer these "pork deals" are almost invariably the city members. This does not imply that most of the city members of legislatures are of this sort—for most of them are not. But it does mean that some of them are the ones who are usually found with the smell of "pork" on their fingers. They, and not the country members, are the dispensers of this toothsome commodity, as a rule. There is never too much "pork" for those who stand close to the barrel, and they are always ready to save handing out a slice whenever possible.

Again, in every legislature there are scores of country members—and others, for that matter—who are not open to the "pork" argument. They would keenly resent being approached along any such line. The only

way members of this class can be "lined up" for the legislation which the city member—corrupt or incorrupt—wants, is through a feeling of honest obligation, through a sense of being decently reciprocal.

The Logic of the Situation

What is the logic of this situation? That the city contingent is generally willing to oblige the country members by voting for a country measure in order to establish this valuable sense of obligation. So long as the measure does not antagonize city interests or arouse the hostility of city constituents, the bill for the benefit of the country districts can almost invariably command the support of the city members—and that for the mere asking. The city member knows that he will sooner or later need the vote of the country member for some hotly contested bill, and that the reciprocal loyalty and friendship of the country member will count for a whole lot more than a big corruption fund.

This is why it is always easy to pass any good measure for the benefit of the country districts, and to pass it on its merits. And in dismissing this phase of the subject, let it be repeated that a whole lot of clean, upright and incorruptible members of the legislature are sent there from the cities. On the other hand, not all country members are entirely above suspicion. I repeat: As a matter of fact, there has been in recent years a decided improvement in the personnel of legislatures in general, and on the whole the standard is probably higher than is generally believed.

Make This Main Point Clear

But there is one element in making an approach for good-roads legislation which should not be overlooked. Be prepared to make it perfectly plain that the legislation asked for is really wanted by the people of the country districts. The whole fight is right in this point. Only a few days since the Speaker of the House of a big legislature said to me:

"All my experience goes to show that there is little difficulty in getting ample support for any country measure which the legislators are sure is actually desired and demanded by the people of the country districts of the state as a whole. Take it in my own state, for example. There has been some effort to get state-aid legislation, but the majority of the members believe that it is not generally demanded by the people out in the country districts, that there is strong opposition to it, in fact, in a large number of localities.

"This means that the preliminary work of those having the active campaign for state aid in hand has not been done and that their fight is still with the country people themselves and not with the legislature.

Working Through the Farmers' Institutes

"If I were to undertake a campaign for state-aid legislation for good roads, I would do the principal work through the farmers' institutes. There is where the soundest educational work can be done. And there are few states, especially in the West, where this is not absolutely necessary. Farmers generally are very cautious about anything which will increase their taxes. Again, they are prone to the opinion that under the ordinary scheme of state aid in road building the whole expense—or practically all of it—falls on them. And until they are taught that this is not the case they are bound to make their opposition felt when the measure comes up in the legislature.

"So, I say, educate them thoroughly through the farmers' institutes and through the various farmers' organizations which are generally represented in those institutes. The average legislator has a world of respect for the farmers' institute; he believes that these gatherings are really and spontaneously representative of the farmers and their wishes. It is not quite the same with the good-roads organization pure and simple. The legislator recognizes that here is a body of men brought together for the express purpose of promoting good roads; there may be some ulterior purpose behind it, and there may be not. But he does believe that the

farmers' institute is devoted to all the interests of the farmer and that its official utterance comes with the voice of authority and sincerity. Consequently he attaches especial weight to its declarations. If practically all of the institutes in the state were to go on record demanding the passage of a certain measure providing for state aid for good roads, I should feel little or no doubt about the passage of that bill.

The Real Sentiment of the Farmers

"Bodies of this sort which represent the sentiment of the farmers and which are not artificially assembled for the express purpose of drumming up sentiment for certain legislation are the ones which will easiest convince the legislators that the measure has genuine and general support throughout the country districts. And when the membership of any legislature is convinced that most of the people in the farming sections of the state want certain legislation, they are going to hustle and give it to them. That's certainly in line with my experience. Legislators are not looking for a chance to deny the great 'country element' of their state's legislation which they are sure the country folks want. Instead, they are often at a loss to find a measure of real broad moment that will put them right and solid with the farmers and the farmers' friends."

Here is the secret of the thing right from the inside. If you want good-roads legislation, go to the legislature with the backing of the farmers' institutes, the farmers' alliances, the granges and all the other organizations into which the real farmer sentiment of the country crystallizes. Plug every knot hole through which a ray of doubt could filter, so far as the desire of the country people are concerned—and the rest ought to be easy!

Just one other hint was dropped by the Speaker:

"Keep the campaign clear of the automobile. The farmers are not fond of the touring-car fraternity. They don't like to think they are building good roads for the benefit of the automobilists. The less said about the wishes of the man whose cars scare the farmers' horses and throw dust in the face of himself and his family, the better."

* * *

Alaska Wheat

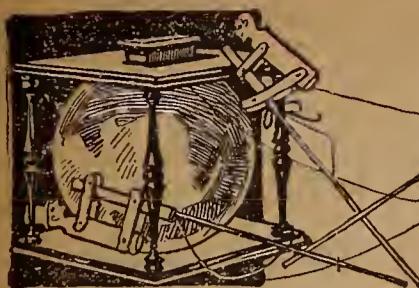
PROF. W. H. OHLIN, agronomist of the Colorado Experiment Station, in answer to a letter concerning the much-talked-of Alaska wheat, says:

"I am pained to know that some unscrupulous persons are seeking to deceive our industrious farmers, desiring better milling wheat, by foisting upon them the so-called 'Alaska Wheat' as a superior milling wheat, of high yielding quality.

"Through the courtesy of Mr. Halsey C. Rhoades, of Denver, Professor Knorr and myself have been privileged to make a study of this wheat in the field. We seeded it by the side of known Egyptian, or Seven-Headed, wheat, and have studied both wheats from germination to maturity. The two wheats are absolutely identical. After harvest we will make the milling test of both wheats and publish a bulletin on the full results.

"Suffice to say now, Egyptian, Seven-Headed, Mummy or Alaska wheat (the various names by which it is known) is a soft spring wheat, not desirable to Colorado millers, and where grown to any appreciable extent in this state, will be discounted or docked in price by Colorado millers. Instead of being a very desirable wheat for milling purposes, it is quite the reverse, since it has high starch content and low gluten content of poor quality.

"When Professor Knorr and myself have completed the milling, sponge and baking contest, using Defiance, our best spring wheat, as the unit standard of value, we shall do all we can to interest the United States Department of Agriculture in taking steps to protect farmers from being imposed upon by this 'so-called discovery' of a new wheat."



Politics

A Series of Open, Broad-Gaged Talks

By Henry Alfred Lewis

IT is meet that you who read and I who write should dwell together in peace and unity. Otherwise the editor of *FARM AND FIRESIDE* can be relied upon to arise in his might and drive me into ink exile.

That a so necessary peace be preserved, it is best, perhaps, for reasons obvious, that I say as little as may be of what candidates are abroad in this campaign. The mammal man, in his sentimental construction, is peculiar. Do you but touch rudely our candidate; behold, our wrath is bottomless, our resentment without a rim. Once the election be over, a cooling change sets in; our mood abates, our blood subsides. He who would have torn you limb from limb, for assailing his candidate, will very likely maintain himself with philosophic calm while you attack his president. More, he will perhaps throw a rock or two himself, just to give you the range, should your own assault fall short for feebleness, or by reason of some ignorant failure to sufficiently elevate your hind sights.

* * *

In a way it is, I suppose, nothing more than just the maternal instinct over again, in one of its million or more expressions. The old hen will display the valor of a Boadicea in defending the egg, and yet care little or less for the full-fledged chicken that goes to the broiler. Even so with the honest citizen. He defends the candidate, only to forget the officer. You who may not touch the chrysalis will be welcome later to crush the butterfly.

It's all excellent and as it should be. Wherefore, you and I and all of us will let our candidatorial caterpillars alone. In freer future days, say next year during that larger half that follows inauguration, we will be merrily privileged to take the official trail of the elected ones—that is, we will, should we still continue on writing-reading terms.

* * *

But though we must not consider candidates, lest we become involved—to my downfall—in a clench, there be other topics, political and pressing, in a full discussion of which we may unbuckle. Our interests in these, whether we be Democrats or Republicans or Populists or what you will, are one and the same. They travel side by side, and are common to us all. And you know there's nothing like a common interest to lock the ranks of humanity, and set it as a body to marching all one harmonious way.

* * *

Before approaching one of these many topics of a general interest, one, too, with its right resting decisively on politics, permit me to offer a prefatory word. It should, I think, possess some final bearing. There be those who have said that the public hates wealth, and the rich ones who have it. This, permit me to urge, is rank misstatement. The public does not hate wealth, but only the robber wealth that plunders it. The public no more hates gold than it hates a gun. It is when the gold or the gun is aimed at the public's destruction that the popular eye begins to sparkle and the popular anger to stir.

While there arises no popular condemnation of mere wealth, however, there does exist popular suspicion, addressed to big companies—public service and trade. And even your most confirmed corporationist must admit that this attitude of distrust has much to keep it in countenance. With public-service corporations—half water—paying forty per cent where they should by law pay but four, with poisons sold as medicines, with peculiar beef, with food adulterations, with rebates and the pike-greedy monopolies spawned of them—with all these, I say, on daily exhibition all about us, it would be strange indeed if the people proved both blind and deaf to the invidious lesson thereby taught.

* * *

Take the railroads, just now detracting from the gaiety of nations by notching up freight rates, and whimpering over suggestions to reduce passenger figures to two cents a mile. Street railways, with comparatively a more expensive equipment and a larger force, everywhere make money at one half a cent a mile; but—and hear them tell it—the great trunk lines, if they are not mulched, must have at least their three cents a mile from every traveler, or sink fainting into the arms of a receiver.

Above I spoke of whimpering. In that whimpering connection I may state that the railroads not only whine, but scold. More often than once it has been flung at me that "the country couldn't get along without the railroads," and all with the idea of justifying these self-sufficient corporations in patronizing Uncle Sam.

Wasting no space replying to this conceit, I must no less humbly submit that—as usual—there are two ends to the alley, and that the railroads couldn't get along without the country. Without stopping to take up what the people have derived from the railroads, I must still point out that during the decade last past the railroads have received from the people something over \$17,000,000,000. Also, the operating expenses of the roads receiving it were under \$11,500,000,000, leaving a profit lining the railroad pocket of more than \$5,500,000,000. One would imagine that such a showing ought to provoke some tenderness on the part of the railroad toward a goose that laid so golden an egg.

To the holders of railroad bonds, the public during those ten years has paid interest to the resounding

If you don't agree with Mr. Lewis, "talk back" to him, confining your reply to two hundred words. We shall hope to publish some of these replies from time to time.—THE EDITOR.

tune of \$2,600,000,000, and to shareholders in dividends \$1,600,000,000. Conditions so rich as to require eleven figures in their exhibition should set the railroads to doffing their hats to the public, not demanding that the public doff its hat to them. Likewise, that whimpering and whining and scolding would seem to be vastly out of place.

* * *

Turn your eyes toward the Atlantic seaboard, and contemplate a railroad soft coal situation. What follows, while regional as a story, has its parallel in other railroad corners of the national earth. Speaking broadly, in the section named there are four coal fields. One is tapped by the Pennsylvania, one by the Baltimore and Ohio, one by the Chesapeake and Ohio, one by the Norfolk and Western. If railways and coal miners competed, in their mining and their hauling, on their merits, as both nature and the laws of the land demand, bituminous coal in Boston, in New York, in Philadelphia and in Baltimore, to say naught of hundreds of other towns, would be cheapened to the consumer to the pleasant tune of a dollar a ton.

This would mean warmth to frozen poor folk. Likewise, it would mean a deal to the manufacturer. And don't forget, O reader! living anywhere between the oceans, that it is you, when you buy his products, who pay the coal bills of the manufacturer. Those frost-bitten poor are local in their shiverings; but with the last word it is your pocket that is searched for the manufacturer's extra dollar a ton—that illicit fruit of Pennsylvania Railway rapacity.

* * *

Pennsylvania Railway? Yes. And I'll tell you why: The Pennsylvania Railroad owns not alone itself, but a controlling interest in the Baltimore and Ohio, the Chesapeake and Ohio, and the Norfolk and Western. Through these, and by itself, it owns a controlling interest in the bituminous-coal mining that goes on in the regions served by the four lines.

Dominating, in this manner, the bituminous-coal production of the East, the Pennsylvania ordains various things. To put up the price of coal, it strictly limits the output. That its own mines may not suffer, its method in limiting the output is to kill off mines wherein neither it nor its officers have an interest.

In killing competition, the four railroads—all under the dingy thumb of the Pennsylvania—resort to every kind of tactics. They refuse side tracks; or, where side tracks exist, they fail to furnish cars, or furnish too few. What few they furnish are, by one duplicity or another, delayed in hauling. These villainies are open to the eye, and common. Meanwhile, those mines which are owned by the railroads, or by men who control the railroads, are given what care they need, and their product is sent racing off to market without hindrance or delay.

What is the result—the inevitable result? Bankruptcy for coal operators in whose mines the railway men are not part owners. This last is the blackmail reason why mine owners—as sworn evidence has shown—have given blocks of their stock to railway people, running from high officials in the main offices to gentlemen in overalls working about the yards. Likewise, these things are all in defiance of law. Also, they are known to Congress and the Interstate Commerce Commission. You can help in forcing action by these bodies.

* * *

Having limited the gross output, the railways—always under the callous-knuckle of the Pennsylvania—settle how much shall come from each of the four great coal regions, served by the railway quartet named. To make this coal apportionment, which arbitrarily determines how much each region shall produce, how much each railroad shall haul, and what shall be its charges for such hauling, the railroads have invented certain secret associations. These are called variously the "All Rail," the "Tide Water," and so on. It is the province of these associations, working secretly and in the face of law, to settle week by week what amount of coal each of the four railways shall bring to market. And is not the coal output, sticking to the practical, measured not by what is mined, but by what is hauled?

* * *

Scores of coal-mine owners have been made bankrupt by the machinations of the railways, and by their refusal to furnish cars. Beyond this, by the illegal system described, the railways not only plunder the public with higher prices for coal, but rob their own shareholders by limiting the quantity hauled.

In addition to the above, there is the rebate villainy. The Pennsylvania not only owns control of the three other roads, but a majority interest in the mines. It is its own carrier, its own shipper. It holds soft-coal destinies in the hollow of its hand. It can give you much or little—or none—at what figures it sees fit. Is it necessary to say that this is also in the teeth of law—a merest scandal on good government?

There is a learned Theban, Judge Gaynor—Judge William J. Gaynor. I am full as to the name, since I think you are likely to hear of him again before long. I was recently in converse with Judge Gaynor concerning railroads and rebates—the right of the one, the iniquity of the other. This in part is what he said:

"Rebates? Once upon a time a man named Have-meyer said 'Protection is the Mother of Trusts.' He was wrong. Rebate is the mother of Trusts. Protection may be their nurse—may rock their cradle and warm their milk—but their mother is Rebate.

"The extent," continued Judge Gaynor, "to which railway corporations have violated their duty and the law of their being, by carrying the freight of some at a lower rate than is exacted of their rivals, enabling the favored ones to undersell and ruin said rivals and establish a monopoly in themselves, forms the most criminal chapter in our history. The railways are the public highways. They should be open to the use and service of all on equal terms. The principle which underlies a railroad is the principle of the old toll road. Suppose some toll gate of the olden time had charged some particular farmer five cents, and every other farmer ten. What would have happened? The ten-cent farmer would have torn that toll gate down. And yet what is the difference between the five and ten cent toll gate, and a railroad that carries one man's oil for one dollar and charges every other oil man two dollars? As I say, this freight favoritism is the mother of Trusts. Standard Oil, that first and greatest Trust, was created and is maintained by it.

* * *

"Our railway companies," Judge Gaynor went on, "are not private corporations, conducting a private business, and free to do as they please. They are created by government, and given a franchise to build and operate a road for public use. The government lends them its great right of eminent domain. Our iron roads are as much public highways as are our dirt roads. Before the coming of railroads, government owned and maintained its highways. It let the railways in their ownership pass into private hands. None the less they are public roads.

"The prime yet simple object of government is to secure distributive justice for all. Prosperity is possible only when, to the highest production of the useful, you add the just distribution of the product among those who contributed to its production. The railroads, acting through rebates, have limited this in some instances, prevented it in others. To limit it, or prevent it, is not alone to defeat the purpose of government and destroy that justice which was the reason of its birth, but it is to pry at government's very foundations with a final certainty of its overthrow. The genius of Cromwell put this in a sentence, and the Protector's blunt wisdom is as vital to-day as in the hour he uttered it. Said he, 'If there be any one who makes many poor to make a few rich, that suits not a commonwealth.'

A Letter

TO THE EDITOR:—I am glad to see *FARM AND FIRESIDE* take up the matter of politics. It has been the rule among agricultural papers to allow no politics in their columns, on the pretext that politics have no place in a farmer's paper. I will admit that bitter partisan attacks on people, such as are found in all partisan papers, have no place in a journal that goes to people of every shade of political faith, but plain, intelligent discussion of politics surely has.

Trade journals—that is, the representative journals of every class of tradesmen and artisans—indicate plainly to their subscribers which of the various candidates seeking office will, if elected, best serve their special interests. While they do not, as a general thing, insist that their subscribers must vote for the persons named, they put the matter so strongly that most of them do. The retail-trade journals fight every man who is likely to favor a parcels post, and where such a man is a candidate, tradesmen, without regard to party, quietly snip him. In every other line of business it is the same. The farmer is considered the legitimate prey of all classes, and his papers must keep politics out of their columns from fear that he might be led to vote for his own interests. There are a few agricultural journals that come out squarely and advocate the election or defeat of some candidate. The reason for this action is plainly given, and farmers can judge for themselves whether they are good and sufficient or not.

There is no publicity in the wide world like that of the newspapers and various journals, and a man certainly gets into the lime light when he becomes a candidate for an important office. The ordinary newspapers have nothing like the influence with the classes that their special journals have, because these latter stand for the interests of their people exclusively, while the former stand simply for their party, good or bad. It is high time for the farm journals to come out of their narrow-gage ruts and give the farmers some straight, non-partisan pointers in politics. It will help largely in preventing them from following after wild visionaries with a graft attached. The farmers know full well that they have not been accorded fair treatment generally, but they have not known how to remedy the matter. If their journals, with their full access to the facts, begin to explain them and show what farmers' votes can do, there will soon be a new song sung. Why should not farmers as well as tradesmen vote for their own interests? FRED GRUNDY.





The Lady of the Slipper

By Martha Cobb Sanford



AT THE snap of a twig, followed by the unmistakable sound of a footstep, Nan sat transfixed, her hair blowing with the breeze, her bare feet dangling in the brook.

"Oh, please don't move, little girl!" begged a masculine voice. "That's simply great. If you'll sit that way just a few minutes I'll—I'll give you something beautiful afterward."

The bribe was quite unnecessary, for retreat, of all things, was farthest from Nan's thoughts. She was distressingly conscious that it was the better part of discretion—as well as valor—to stay put. The one method of defense at her command she made quick use of—with an energetic bob of her head she shook a tousled mass of hair over her face. Then rigidly she waited the fateful click of a camera. Electrocution, it flashed through her mind, must be a very similar sensation.

But no click followed, only a muttered "That's ripping," or possibly "dripping"—Nan wasn't sure which. At that, curiosity got the better of fear, and she peeked through the crinkled strands of her hair. Not twenty feet away from her, easel set and canvas spread, sat a picturesque young artist "sketching her in" as calmly as if she were a natural part of the landscape. Consternation upset for a moment Nan's nicely poised equilibrium, and something fell with a splash into the water.

The artist looked up. Nan watched him cautiously through the tangled fringe of her hair, fearful lest he should start to come toward her.

"Did you drop something?" he asked. There didn't seem to be any denying the fact, so Nan nodded, and answered briefly and solemnly, "A stone."

"You're a queer—little—duff-fer," the artist commented, but Nan could tell, from the way his words trailed along apathetically, that he was thinking more of his sketch than of her. Quite illogically this nettled her, and she sized him up thereupon as insufferably bold and unsympathetic.

"What's your name, little girl?"

No answer from Nan, only another mental black mark against her interrogator—she hated inquisitive people, especially inquisitive men. Her persistent silence, however, so far as she could judge from her limited range of observation, seemed only to amuse the villain.

"If you haven't any name," went on the self-satisfied man, "then I'll have to give you one. Let's see—"

At this he looked up from his canvas and smiled condescendingly—the cad! Nan closed her eyes, that she might, like the ostrich, the more effectually conceal her identity.

"How would Arethusa do?" ("Medusa, rather," was Nan's inaudible rejoinder.) "Or Undine or Lorelei? My acquaintance with mermaids" ("Mere-maids," corrected Nan to herself.) "isn't very extensive. Perhaps you can help me out?"

But since she didn't, the one-sided dialogue came to a full stop, and the bold, unsympathetic, inquisitive, self-satisfied cad of a man went on painting.

Meanwhile, for Nan, the rock upon which she was sitting became most uncomfortable. How the situation was ever going to end was distressing to contemplate. A watery grave seemed to be her only visible means of escape.

But suddenly there broke upon the stillness of the place a furious barking, followed by the wild excitement of the chase—and behold, a squirrel up a tree, a dog, panting, at the foot, an overturned easel, and an empty model throne.

"Poor child! Frightened away by Nick, of course."

For a moment the artist had half a notion to drown the dog, but the effort of collecting his scattered belongings tempered the energy of his wrath. Besides, Nick had discovered something—a small, water-soaked shoe; original color, probably tan.

Now why had she not told him, the little sphinx, that it was her shoe she had dropped? A stone indeed! He shook the shoe free from water, dried it off with his handkerchief, and was about to tuck it into one of his capacious pockets, when suddenly he threw back his head and laughed aloud.

"A heel! It's got a heel, Nick! Do you notice, you old pirate?"

The dog, his red pointed tongue lolling, laughed, too, in his own foolish fashion.

"And little girls don't wear heels, Nick. I know, 'cause I paint 'em. Their shoes are flat, perfectly flat. And now won't we have some fun, old fellow? 'Every dog has his day,' Nick. Ha, ha!"

The next morning Nan was poking along the edge of the brook with a stout stick, when again the snap of a twig, a footfall and the sound of a masculine voice startled her.

"Are you looking for anything?"

What obvious questions the man asked!

Nan looked up courageously.

"Just for—lady's slippers," she answered politely. "They grow along the bank here."

"Yes," the man agreed, equally politely. "I found one here once myself. Let me help you hunt. Perhaps I can find the mate to it now," he suggested, laughing.

Immediately Nan became suspicious, but she was too tactful to show it.

"That was very cleverly put," she told

has bonny hair, though, and I liked her in spite of herself. I want to get her to sit for me again. Do you know her, by any chance?"

This was the first opportunity Nan was given to get a word in edgewise.

"For purposes of identification, your description isn't very definite," she observed dryly. "Bonny hair" is the only real clue you've given me. What color is bonny?"

"Bonny is yellow," he informed her good naturedly. "And that's all I know about her, really, except that she's afraid of dogs, and her name isn't Arethusa or Undine or Lorelei. I tried her on all of those, but she would have none of them."

"I don't wonder," Nan laughed—and her laugh was delightfully contagious. "If you'd tried her on something plain and prosy, like Jane or Nancy, no doubt she'd have found her tongue. By the way, how was she dressed?"

"Oh, in just a simple little cotton frock of some kind—short sleeves, and cut out in the neck, at least the back of it was. But the most stunning shade of blue you

"Oh, perhaps, if I find her," she answered with a lazy, teasing sweetness that left the artist madly in love with her.

He had been dabbling at his sketch some half hour or more the next morning—to very little purpose, to be sure, the direct source of inspiration being absent—when suddenly some one just behind him giggled.

The little girl, of course! Well, he'd play with her a bit—children always liked that.

"I wonder who that is behind me?" he asked, making his voice sound deep and mysterious. "Is it Arethusa?"

A giggle.

"Undine?"

Another giggle.

"Lorelei?"

"A little girl with green hair," was the then astonishing answer.

He turned around. The lady of the slipper was looking at his sketch and laughing at it mischievously. He looked at it himself. How in thunder had he come to mix up things in that shape!

"Yes, isn't it green?" he smiled in rather sickly fashion. "She's a—wood nymph, you see, and I thought she'd look better with green hair. But didn't you find her?"

"Oh, yes, I found her," acknowledged Nan indifferently, "but she couldn't come. She's—she's ill."

"What a pity!" exclaimed the unsympathetic man. "And I've brought her something, too. You know I promised her a present if she'd sit for me."

"Perhaps I could take it to her," offered Nan.

"That would be awfully good of you. Here—it's a box of candy."

"Oh, but that would make her sicker still, I'm afraid."

"That's so. Well, suppose you keep it, will you? That is, if you like candy."

"It doesn't seem quite fair," Nan objected rather weakly, between two bites of a chocolate cream.

"Oh, I'll send the little girl something else," the artist promised. "Do you think she'll be ill long?"

"That depends," Nan replied vaguely. "What are you going to send her?"

"That's a secret. What's her name and where does she live?"

(Heavens, what an inquisitive man!)

"That's my secret," Nan answered him mockingly.

"But I want to send her something."

"Oh, well," Nan gave in at last—was she not eating the little girl's chocolates?—"she lives in the big white house with the fluted columns. Do you know it?"

"What!" exclaimed the artist in astonishment. "The old Morrison place right near here?"

Nan nodded.

"But I didn't know there were any children there. I—I was given to understand they were all grown up."

"Most of them are," Nan informed him disinterestedly.

"What's her first name?"

"Nancy, just as I prophesied. Isn't that a coincidence?"

"A most suspicious one," he answered her boldly, and Nan, taking fright, although Nick was nowhere in sight, disappeared abruptly, carrying the unfinished box of chocolates with her.

At breakfast time next morning a most mysterious-looking package was left at the big white house with the fluted columns. It was marked "For Little Nancy Morrison," much to the amusement of Nan's father.

"Come, open it, dear," he urged playfully. "It looks mighty like a shoe box to me."

Nan, protesting and blushing, undid the wrappings. A low tan shoe filled with freshly gathered lady's slippers was disclosed.

"An extraordinary floral conception," Mr. Morrison commented, eyeing it with undisguised curiosity. "Is there no printed explanation with it?"

"It's—it's self-explanatory," Nan assured him, tucking a small, closely scrawled card up her sleeve.

"Can't say I find it so," her father admitted, laughing. "Come, fess up, Nancy. Who's the man?"

[CONCLUDED ON PAGE 17]



"The sound of a masculine voice startled her"

him. "But please don't bother to hunt. I probably found all there were yesterday."

Yesterday—that was a very careless slip! Fortunately, however, no advantage was taken of it, and Nan turned to walk back up the wood path, graciously signifying that the interview was at an end.

But she was mistaken.

"I wonder if you'll be good enough to help me find something, then," the bold man ventured. "I lost it near here yesterday."

That fatal word again!

"What was it?" she asked—one couldn't be rude.

"A little girl," he answered soberly. "I found her here and lost her here. She made such a pretty picture sitting on a rock dangling her feet in the brook, that I asked her to let me sketch her." (Did he indeed!) "She was a contrary little duck—wouldn't talk, wouldn't smile—in fact, I didn't see her face at all, for as soon as she heard me she bobbed her hair over her head most inhospitably. She

ever saw! Wait a minute. I've got the sketch here. Let me show it to you. Why didn't I think of that before?"

Before Nan could make up her mind whether or not to take advantage of this chance to run away again, he was coming toward her, sketch in hand.

"Now do you think you'd recognize her?" he asked jubilantly.

"From just that little patch of color?" she challenged—but with such charming impudence as to quite disarm offense.

"Well, you see," he explained humbly, "I've had only one try at it. It's really going to be a ripping picture when—

"Not dripping, then," sotto voce from Nan.

"I beg pardon?"

"Very—ripping," Nan affirmed. "Well, I'll try to find this lost child with the 'bonny yellow hair' and the 'stunning blue frock.' It seems to be a case of matching colors, chiefly," she laughed, turning again toward the wood path.

"You'll bring her to-morrow—to-morrow morning?" he called after her eagerly.

From the Joke Makers



A Happy Thought

STANGER—"My, friend, why are you swearing so?"
CUSSITY—"Why? Because of a blank fool of a doctor. I got some pills for a pain in my back, and the directions read: 'Take one a half hour before you feel the pain coming on.'—Judge.

More Important

TWO village worthies were discussing a mooted point in grammar as to whether a hen "sits" or "sets" when she takes to her nest.

"Seems to me it's a heap more important," interrupted a by-standing farmer, "whether she 'lays' or 'lies' when she cackles."—Harper's Weekly.

Both Wrong

TWO Irishmen met one day, and after the usual greeting, a bystander reports to have heard a dialogue something like this:

"When did you see Moike Hooligan last?"

"Sure, I thought I saw him yesterday across the street, and he thought he saw me; but when we got up to each other, be jabers! it was neither of us."—Judge's Library.

What's in a Name?

TUDOR JENKS, the author of many bits of humorous verse and prose, has always had difficulty on first meeting people in getting them to accept his name as his own. They insist on regarding it as a rather odd pseudonym. Recently the matter has grown worse and he has experienced difficulty in establishing its right in articulate speech. Once, in front of the Fifth Avenue Hotel, Mr. Jenks was an involuntary witness to a fight between two cab drivers. The men were promptly arrested and Mr. Jenks was haled to court with them to tell what he had seen. The police magistrate was elderly, gruff and short-tempered.

"What is your name?" asked the lawyer.
"Tudor Jenks."

"Once more, please."

"Tudor Jenks."

A sharp rap from the Court, and this, explosively:

"Witness will stop making a funny noise and give his name!"—Saturday Herald.

Via Air Ship

EMPLOYER—"Did you tell Mr. Boreham, who called, that I had gone to America?"

NEW OFFICE BOY—"Yes, sir; I told him you had started this morning."

"Good. What did he say?"

"He wished to know when you'd return, sir, and I told him I did not think you would be back until after luncheon."—Pick Me Up.

His Mistake

THE brave ship was wallowing in the waves that threatened to engulf her at any moment.

Hastily the captain ordered a box of rockets and flares brought to the rail, and with his own hands ignited a number of them, in the hope that they would be seen and the passengers and crew rescued.

Mid the rockets' red glare, a tall, thin, austere individual found his way with difficulty to the rail and spoke to the captain.

"Captain," said he, "I must protest against this dare-devilishness. We are now facing death. This is no time for a celebration."—Success.

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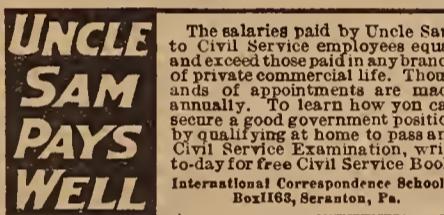
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The Household Department



Tried and Trusty Recipes

Grape Catchup

STEW five pounds of ripe grapes over a slow fire until soft; strain through a sieve, and add two and one half pounds of sugar, one tablespoonful each of cinnamon, allspice and pepper, half as much each of cloves and salt, and one pint of vinegar. Boil until thick, and bottle. Nice on cold meats.

Jellied Apples

PARE and core as many apples as are desired, place in a stew pan with sufficient water to cover, sweeten, and simmer slowly until tender. The more slowly they cook, the more transparent they will become. When done, remove the apples, add enough sugar to the liquor to make a rich sirup, and boil one hour. When partially cool, pour over the apples, which will be jellied when thoroughly cold.

Baked Macedoine

IN a deep baking dish put alternate layers of boiled rice and cold chopped vegetables, the top layer being of rice. Pour over this sufficient stewed tomato to be visible when the dish is lightly tilted, the tomato having been seasoned with one level tablespoonful of sugar, half as much vinegar, a bay leaf, salt and pepper to taste. Dot the top with bits of butter, and bake twenty minutes. Worcestershire sauce may be added to the tomato for those who like it, and the mixture can be cooked in individual dishes instead of the single large dish.

Potato Croquettes

A DELICIOUS way of serving potatoes is the following: Boil and mash twelve medium-sized white potatoes, using one tablespoonful of butter instead of milk. When they are nearly cold add the beaten yolks of three eggs, one teaspoonful of chopped parsley, one fourth of a teaspoonful of grated nutmeg and six drops of onion juice. Stir these ingredients together until they are smooth. Make up into small cone-shaped croquettes, and stand away to harden. When they are firm, roll them in the beaten whites of the eggs and cracker dust, and fry in deep boiling lard until a light brown. This will make twenty-five croquettes.

Apple-Custard Pie

THIS is a delicious old-fashioned delicacy but little known to the present generation. The ingredients are as follows: Three handfuls of stewed apple, well drained and sweetened, one scant cupful of sugar, six eggs and one quart of milk. Separate the whites and yolks of eggs, and beat. Mix the yolks with the apple—which should be cold—and season with nutmeg. Add the milk gradually, stirring constantly. Lastly beat in the whites, pour into a deep plate lined with pie crust, and bake like an ordinary custard pie.

Maple Delight

THE ingredients for this confection are one pound of maple sugar, a scant half cupful of granulated sugar, one cupful of milk or cream (preferably the latter), butter the size of an egg and one cupful of chopped nuts (one kind or assorted).

Boil the sugar and milk until it forms a ball when dropped in cold water, then add the butter and nuts, beat lightly, and pour on buttered tins. When cool cut in squares.

New Hampshire Breakfast Cake

THE following recipe for breakfast cake has never been known to fail, and will be found far lighter and more delicate than the ordinary "Johnny cake." The ingredients are one cupful of milk, one half teaspoonful of soda, one teaspoonful of cream of tartar, one half teaspoonful of salt, one egg, one third of a cupful of sugar, one half cupful of flour and one cupful of meal.

Mix the dry ingredients thoroughly, except the soda, which should be dissolved in the milk. Add the latter, together with the beaten egg, to the dry ingredients, and bake either in a sheet or muffin pans.

Attractive Crochet Patterns

Crocheted Doily

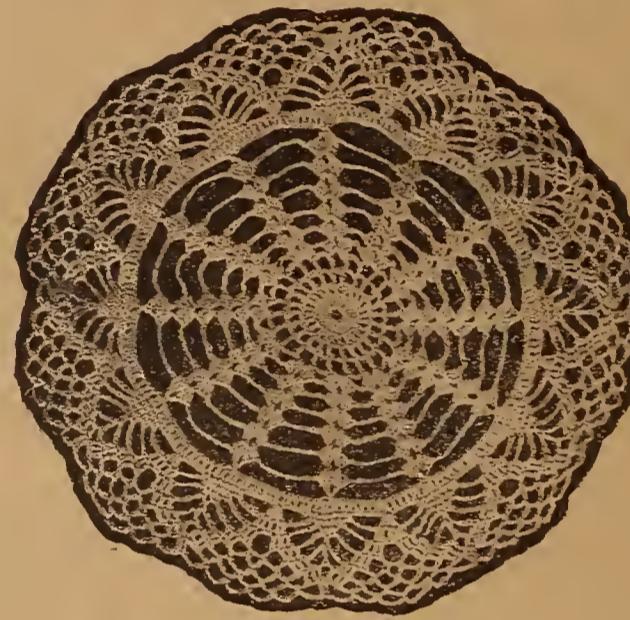
USE linen thread of any number preferred, and a hook to carry the thread easily. Make a chain of eight stitches, and join in a ring.

First Row—Chain three, twenty-three trebles in the ring, join to top of three chain.

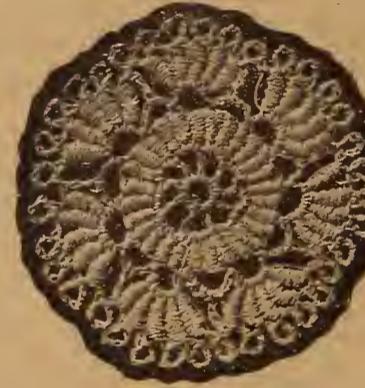
Second Row—Chain four; one treble, one chain, in treble of first row, all around, join to third stitch of four chain.

Third Row—Chain five; one treble, two chain, in each treble of second row, join to third stitch of five chain.

Fourth Row—Chain six; one treble, three chain, in each treble of third row, join to third stitch of six chain.



Crocheted Doily



Crocheted Wheel

Fifth Row—One single crochet under last three stitches of six chain; three chain, two treble, two chain, three treble, under the same three stitches of six chain; two chain, *miss one space made by three chain, shell of three trebles, two chain, three trebles, under next three chain, chain two, repeat from * all around, and join to top of three chain, which takes the place of a treble in the first shell of each row.

Sixth Row—Work with single crochet to the two chain in middle of first shell, three chain, two treble, two chain, three treble, under two chain, three chain, *shell in next shell, three chain; repeat from * all around, and join to top of first three chain.

The next four rows are made the same as the sixth row, except that more chain stitches are made between the shells in each row than there were in the previous row. In the seventh row there should be four chain between the shells; in the eighth row, six chain; in the ninth row, seven chain; in the tenth row, nine chain. The chain should be long enough to make the work lie flat.

Eleventh Row—Work with single crochet to top of shell, *chain fifteen, one double crochet in top of next shell; repeat from *; join with a single crochet to beginning of first fifteen chain.

Twelfth Row—Chain three, one treble in each chain stitch all around, putting two treble in one chain stitch at top of each shell to widen; join to top of three chain.

Thirteenth Row—Chain two, one double crochet in each of next two trebles, *chain five, miss five, three trebles in next treble (which should be exactly in middle of the space between the shells), chain five, miss four, one double crochet in each of next seven trebles; repeat from * all around, chain five, miss five, three treble

in the next treble, chain five, miss four, four double crochet in next four trebles, join.

Fourteenth Row—Chain two, one double crochet in next stitch, *chain five, miss five, five trebles in next five stitches, chain five, miss five, five double crochet in next five stitches (that is, in the middle five stitches of seven double crochet of last row); repeat from *; five chain, miss five, five treble, chain five, miss five, three double crochet, join.

Fifteenth Row—Chain two, one double crochet, chain five, miss five, three treble, chain four, miss the center treble in the group of five treble of last row, one treble each in next three stitches, *chain five, miss five, three double crochet in three middle stitches of five double crochet in last row, chain five, miss five, three treble, chain four, miss one, three treble, repeat from *; chain five, miss five, one double crochet, join.

Sixteenth Row—Chain six, one treble in last stitch of first five chain of last row; one treble in each of first two trebles, chain three, one double crochet under four chain, chain four, one double crochet under same four chain, chain three, miss one treble, one treble in each of next two trebles and first chain stitch; chain five, *one double crochet in middle stitch of three double crochet of last row, chain five, miss five, one treble in each of next three stitches, chain three, one double crochet under four chain, chain four, one double crochet under same four chain, chain three, miss one treble, one treble in each of next two trebles and first chain stitch, chain five, repeat from *, and join to first stitch of six chain.

Seventeenth Row—Chain four, miss four, one treble in each of next three stitches, chain four, one double crochet under each three chain, chain four, miss one treble, one chain, *one treble in one double crochet, chain one, miss four, one treble in each of next three stitches, chain four, one double crochet under each three chain, chain four, miss one treble, one chain, repeat from *; join to third stitch of four chain.

Crocheted Wheel

LINEN thread or crochet silk may be used, according to the use to which it is to be put. Make a chain of ten stitches, and join in a ring.

First Row—Chain four (to take the place of a treble), chain three, *one treble in the ring, chain three, repeat from * until there are nine trebles in the ring (counting the four chain as a treble), with three chain between; join to top of four chain with a single crochet.

Second Row—Chain four, four roll stitches (thread over fourteen times) under first three chain, three roll stitches under each of the remaining loops of three chain, join to top of four chain.

Third Row—Chain six, miss one roll stitch, catch with a single crochet to top of next roll stitch, repeat all around, and join with a single crochet at the base of the first six chain.

Fourth Row—Work with single crochet to middle of first six chain, chain four, *one roll stitch (thread over seventeen times) under next six chain, chain six, join with a single crochet to the first stitch of six chain just made (to form a picot), repeat from * until there are five roll stitches, with a picot on top of each, all under the same loop of six chain, *one double treble under next six chain, five roll stitches with a picot on top of each, under the next six chain, repeat from last * all around and join to top of four chain.

ELMA IONA LOCKE.

Potato Cakes

MIX two cupfuls of mashed potatoes with one of flour, into which one fourth of a teaspoonful of baking soda has been sifted. Mix well with the hands, adding one heaping tablespoonful of butter or lard. The potatoes give all the moisture, so neither milk nor water will be required. Shape into flat cakes, place a slice of bacon on each one, and bake from twenty to thirty minutes. A good time to mix these cakes is just after dinner; then cover the bowl, and let them stand until supper time.

I. A. G.

Miss Gould's Fashion Page



No. 1175—Boy's Double-Breasted Russian Suit
Sizes 2, 4 and 6 years.



No. 704—Short Petticoat, With or Without Yoke
Sizes 24, 26, 28 and 30 inch waist measures.



No. 706—Corset Cover, With or Without Fitted Skirt Portion
Sizes 32, 34, 36, 38 and 40 inch bust measures.



No. 878—Russian Suit With Panel Front
Sizes 4, 6 and 8 years.



No. 851—Misses' Double-Breasted Coat
Sizes 12, 14 and 16 years.



No. 1153—Fitted Single-Breasted Coat

Sizes 34, 36, 38 and 40 inch bust measures.

No. 1154—Nine-Gored Skirt With Trimming Band

Sizes 24, 26, 28 and 30 inch waist measures.



No. 1170—Tucked Dressing Sacque in Two Styles
Sizes 32, 34, 36, 38 and 40 inch bust measures.

No. 1001—Misses' Shirt Waist With Applied Yoke
Sizes 12, 14 and 16 years.



No. 1066—Night Drawers With Full or Plain Sleeves
Sizes 2, 4, 6 and 8 years.



No. 749—Princess Petticoat
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Our Young Folks' Department



The Letter Box

DEAR COUSIN SALLY:—I am so glad that we have a new cousin, and guess all of the other girls and boys are, too. I am eleven years of age. I have four brothers and one sister. I go to school, but our school is out now. We had a picnic at the end of school. There was a large crowd. We had plenty of lemonade.

We have a vegetable garden. We raise cabbage, beets and beans and many other vegetables. I have a little black pet dog. His name is Dock. I think it is so nice in you to give us a corner in FARM AND FIRESIDE. I like to read the letters.

We have a lot of peaches this year. We have dried some. I would like to correspond with some one about my age. This is the first time I have ever written to the cousins. With best wishes to Cousin Sally and the cousins.

Your loving cousin,
FENELLA POOLE,
Smith's Station, Alabama.

DEAR COUSIN SALLY:—May I join your happy band of boys and girls? I am a girl of fourteen summers, and live on a farm five miles north of Columbus, Georgia. We have been very busy drying fruit and canning blackberries this summer. Mother is going to grandma's to spend next week, and don't you think I will have a jolly time keeping house while she is gone. I would like to receive post cards or letters from the cousins.

Your affectionate cousin,
FANNIE BELLE POOLE,
Smith's Station, Alabama.

DEAR COUSIN SALLY:—I am a little boy six and a half years old. I was born in Philadelphia, Pennsylvania, and two years ago we moved to Denver, Colorado. My grandpa in South Dakota sent the FARM AND FIRESIDE to me, and I am proud to have a paper all my own. My mother reads the stories and letters to me as soon as it comes.

I have a nice little dog named Sport. We have lots of fun together. I love to go to school, and in September I will start in the second grade.

I like to live in Denver. From our front porch we can see the mountains with snow on their tops all summer. We can see them from Pike's Peak to Long's Peak, over one hundred miles.

Your cousin,
LEONARD WALLACE RICE,
Denver, Colorado.

DEAR COUSIN SALLY:—I am one of your cousins, and am ten years old. Every day my little chum and I go out in the woods to pick flowers. We gather primroses every night, and divide them between us. The other night we went with sister to bring the cow home, and we gathered large handfuls of flowers.

I planted some vegetable seeds and some flower seeds, and some came up. Mama thinks they are morning glories. My papa has a garden with sweet corn, beans and potatoes, and he also has six fruit trees.

I like the stories in our department. They are just fine, and I like the contests, too. I am going to take part in every one of them.

Your loving cousin,
HATTIE BRADLEY,
Placerville, Colorado.

DEAR COUSIN SALLY:—I like the Young Folks' Department very much. My uncle takes the FARM AND FIRESIDE.

Now I will tell you something of myself. I had spinal trouble five years ago, and it left me so I cannot walk at all. I cannot go to school, but I learn at home. I live three miles from town with my grandma, my mama being dead. I was thirteen the twenty-fifth of July. I have blue eyes and brown hair.

I have a flower garden, and in it I have nasturtiums, sweet peas, four-o'clocks, sweet williams, Japanese morning glories, chrysanthemums, daisies, pansies, violets and primroses. Perhaps you think it is funny that I have a flower garden when I cannot walk, but I can crawl, and I have my flower garden by the walk.

For pets I have two bantam hens, both set this year, and a big yellow cat.

I like to live on the farm. I do not think I would like it in town.

I wonder how many of the cousins are getting a collection of post cards. I have one hundred and five. I also have a collection of little cups and saucers. I have seven.

I will close, as this is my first letter to you.

Lovingly,
ULYSSA CALVERT,
Gervais, Oregon.

The Jewel Flowers

By Izola Forrester

Down in a cool, shady place they grew. Rows and rows of wild flag lilies, each one seeming fairer and statelier than her sisters. Every spring they returned, first the straight, slender blades of green shooting up through the damp earth along the brookside, and then every frog and bird would hurry about to tell the glad news that the lilies were back again.

And they would hold quite a reception the first day the lovely lavender and gold petals unfolded. The frogs would come up from their cool haunts under the ferns and water grasses, and croak a welcome to them, and the bees would all visit them, and chat over last year's honey crop, and the kingly dragon flies, even, would pause in their darting flight to admire the rows of blossoming lilies.

Then the children would discover them, and desert all the buttercups and daisies and wild roses just to pick the lilies.

"They are so different from the other flowers," they would tell each other. "The lilies are like butterflies turned into flowers, and they seem to be alive."

"Ah, but they have no fragrance," the wild roses would cry.

"And they can't tell you whether you love butter or not," said the buttercups wisely.

"Nor who loves you and who loves you not," said the daisies.

"Still they are the handsomest of all the flowers," the children would declare. "They look like enchanted princesses, all standing in a row, with royal robes of gold and purple on."

"Oh, what nonsense," all the flowers would cry. "They're only common flag lilies."

But the lilies grew haughtier.

"Perhaps we are enchanted princesses," they would whisper to each other, as the wind waved them gently to and fro. "I'm sure we look something special. What a pity it is we have to live all our lives in this lonely little dell, with nobody to see our beauty except the birds and bees and frogs and butterflies and these other envious flowers."

"But we love you," said the children. "Oh, yes; but you are only children," said the lilies quite patronizingly, and after a while they were left alone by the children and the bees and butterflies, for they were so proud.

Now, the fairy of that glen was a wood

sprite, and when she had heard what the lilies said, she determined to punish them for their foolish pride.

"You are almost as beautiful as the jewel flowers," she told them one day.

"Oh, what are the jewel flowers?" cried the lilies eagerly, all together.

"They are the rarest flower of all," the wood sprite told them. "I will turn you into them, so you can judge for yourself."

And she touched each lily with her star-tipped wand ever so lightly, but at each touch the lily changed from a living, velvety petaled flower into a dazzling jewel, sparkling and lovely, but lifeless.

After a while the bees flew down to wish the lilies good-night, as they always did, but when they found only cold, hard jewels in place of the tender flowers, they went away. And when the rain fell that night, all the other flowers opened their cups to drink in the sweet summer moisture, but the lilies received none, for the rain fell off the jewels, and gave no drink to the suffering leaves. Even the grasshoppers and the frogs refused to visit the lily corner any more, and the dragon fly went sailing by without even a glance at them.

"But we are precious," cried the lilies in dismay. "We are the rarest flowers in all the world."

Then one day through the dell there wandered a witch. Never once did she glance at the flowers, but kept her eyes fixed on the ground, and prodded it with a sharp stick she carried.

When she caught sight of the jewel flowers, she seized their stems roughly, and tore all the sparkling gems off, and hid them in a sack she carried.

"Where are we going?" cried the lilies in dismay. But the old woman hurried away from the dell, and when she reached her own dark cave, there sat a round-eyed red gnome waiting for her.

"Did you find any?" he demanded. She gave him all she had in the sack, and the lilies were carried away by the gnome to his home in the hills. There he scattered them in the earth, and in the rocks, where it was dark and lonely and cold, and left them. And then at last the proud, discontented lilies knew how wilful they had been, and longed to return to their own pretty dell.

But the wood sprite let them stay in

the gnome's hill until she was sure they were really sorry, then she released them, and one sunny morning they wakened to find themselves back in the dell, in their petal robes of gold and purple.

"You are not jewel flowers any more, are you?" asked the frogs and bees and butterflies joyfully.

"We are glad to be ourselves," said the flag lilies, modestly drooping their heads. And when the raindrops fell that day, they lifted their petals eagerly for the fresh, sweet drops, and were grateful when the children came running and crying, "Oh, here are our lilies back again."

"It is better to be loved than to be the most precious jewels in the world, my sisters," said the tallest lily, and all the rest nodded their drooping heads thankfully.

Cousin Sally's Letter

MY DEAR COUSINS:—I wonder if you will be as excited about the news I am going to tell you as I am. This very minute I'm bubbling over with enthusiasm. Just think of it, your Cousin Sally is going to New York for a whole winter! My next letter will be written to you from that big, busy city, where there is so much to be seen and done. Ever since I read in my geography that New York was the largest city in the United States, and the second largest in the world, I have wanted to live there for a while, to wander around and see all the wonderful things that are there—the big buildings, the ships that come from foreign ports, the museums, the beautiful Hudson River with its Palisades, the Brooklyn Bridge and the Statue of Liberty. There will be so much to tell you about it all. And you must keep writing to me about the country, so that I won't forget how it is out there when the trees begin to turn and nutting time comes around. Send your letters to Cousin Sally, care of FARM AND FIRESIDE, 11 East 24th Street, New York City.

A great many of you have mentioned in your letters to me that you were very fond of drawing. This gave me an idea for the prize contest this month. I am very much interested to see what sort of copies you will make of the jewel flowers. Of course, I shall not expect you to copy the expression on the face of the old witch—that would be asking a great deal too much of you. But do the best you can with the body of the witch and the flowers. I should also like very much if you would make your copies a little larger than the picture on the page.

I have received interesting letters from the following boys and girls: Grace Bass, Minnie Thomasson, Eva Warren, Nettie Weidman, Pearl Larsen, Ord Belle French, Irma N. Johnson, Edith Potts, Lena Smith, Margaret D. Huffine, Charlie B. Norris, Lora Helfrick, Alta Brooks, Carl Kirkpatrick, Elda Smith, Mable Carlson, Angelyn E. Alexander, Maud V. Sich, Christine Lindolph, Rachel Wood, Clara Cooper, Omega Kirk, Orville Lyon, Ima L. Hahn, Winifred Grantham, Emily Jack and Frinda Gordon.

Don't forget to write to me in New York City. Affectionately,
Cousin Sally.

The Prize Contest

FOR the five best pencil or pen-and-ink copies of the picture at the bottom of this page we will give prizes of interesting story books.

The contest is open to all of the boy and girl readers of FARM AND FIRESIDE who are under seventeen years of age. Be sure to state your name, age and address when sending in your drawings.

All copies must be sent in by September 20th, and should be addressed to Cousin Sally, care of FARM AND FIRESIDE, 11 East 24th Street, New York City.

A Double-Action Wish

BY EDWIN L. SABIN

When I'm a papa I will have
A little boy like me;
But he'll not get a spanking, tho'
As bad as he can be.

I'll never send him off to bed.
While yet it's light as day;
I'll never make him go to school,
Nor interrupt his play.

And when he's barefoot and is tired
He needn't wash his feet;
And I will give him all the pie
And candy he can eat.

Oh, won't he know a dandy time,
As you can plainly see!
Wisht I could be that little boy
And have my papa me.



"Where are you going?" cried the lilies in dismay"

Miss Gould's Dressmaking Lesson

NO MATTER for what sort of wear, it's the costume idea which is the fashionable dress tendency of the day. Even morning dresses are designed in this style.

The illustration shows a morning dress which is appropriate for either house or street wear. It is easy to make, and as the waist and skirt are joined, it is also easy to wear. It has no belt to pin to position, and no back placket to open at the wrong time. Indeed, it is an ideal dress for almost any busy woman. The pattern, No. 1173, includes both waist and skirt and may be purchased from the Pattern Department, FARM AND FIRESIDE, 11 East 24th street, New York City. The price of this dress pattern complete is ten cents.

The pattern envelope contains fifteen pieces. Of these, eleven belong to the waist portion and four to the skirt. Each piece of the pattern is designated by a letter, which is perforated through it. The waist pieces are lettered as follows: Front V, back T, yoke Y, belt X, neckband I, collarband A, collar L, sleeve K, upper lap W, under lap F and cuff J. The skirt pieces are lettered: Front gore E, first side gore M, second side gore N and back gore H.

The pattern pieces should be smoothed out carefully before they are placed on the material. In cutting, lay the edges marked by triple crosses (XXX) on a lengthwise fold. Place the other parts of the pattern with the line of large round perforations in each lengthwise of the goods.

As a rule, morning dresses in this style are made of fabrics in which there is no up and down or nap. Several pieces of the pattern may be reversed in order to cut economically. This is permissible only in such materials. If, on the other hand, the goods is figured or has a nap, each piece must be placed on the material so that the grain of the fabric runs only one way.

In this case it will be necessary to provide one and one half yards additional of twenty-seven-inch material or one yard of thirty-six or forty-four inch material. The piecings on the several parts of the dress may be neatly done and will not show, especially when a striped fabric is used.

The right front of the waist is cut like the pattern. There is no box plait on the left front, so this side should be cut off by notches. There is an extension or lap added at the front of the first side gore. This is used on the left side, where the skirt opens. As the lap is not necessary on the right side, it should be cut off by line of small round perforations.

Mark all the perforations and cut out the notches carefully before removing the pattern from the material.

To MAKE THE WAIST: Join the pieces by the corresponding notches. Gather the front at the upper edge between the double crosses and join to the lower edge of yoke as notched. Turn a one-inch hem on left front. Turn hem on right front by notches and stitch in three eighths of an inch from the edge of the hem. Crease the right front on line of triangle perforations and stitch in three eighths of an inch from the edge of the crease. Include the loose edge of the hem in the tuck. This forms the box plait on the right front. Join the neckband to the neck as notched.

Gather the waist at lower edge between double crosses and join to the upper edge of belt as notched. Match the centers of waist and belt, back and front, and bring the large round perforations in the belt to the under-arm seams. Sew buttons on the left front three eighths of an inch from the edge. Work buttonholes in the center of the box plait. Lap the fronts, bringing the edge of left side to center line of large round perforations on right side, and fasten with buttons and buttonholes.

Join the collar to the collarband as notched. Arrange the collarband around the neck, and join to the neckband, back and front, by means of collar buttons. Lap the front ends of the collarband, matching the center lines of large round perforations.

The yoke, neckband, collar and collarband in wash waists, as well as the cuffs, should be cut double. The two thicknesses should really be cut out at the same time, in order to be sure that they are on the same grain of the material. When you have decided whether the stripes in your goods are to be vertical or horizontal in these parts, pin two thicknesses of the fabric together before cutting them out. If they are made in this manner, both thicknesses will shrink in exactly the same way when the waist is laun-

dered. If, however, the outside is cut properly and the inside is cut bias or on the length of the material, it will be almost impossible to iron them smoothly. The collar, cuffs, collarband and neckband in these wash waists should be interlined with one or more thicknesses of linen, according to the individual taste for soft or stiff collars and cuffs.

The first step in making the sleeves is to finish the slashed opening with the laps. Crease the under lap in the center and join to the under edge of the slashed opening as notched. Now join the upper lap to the opposite side of the opening by notches and stitch the seam. Fold the lap over on line of large round perforations, turn in the edges three eighths of an inch and stitch flatly to position on the top of the sleeve. Gather the sleeve at upper and lower edges between double crosses. Finish the cuff at the lower edge, but leave the upper and side edges open. Slip the sleeve in between the upper and under cuffs, and arrange the fulness to the under side of the cuff as notched. Then baste the upper side of the cuff to position and stitch flat. Pin the sleeve in the arms-eye, placing the front seam at notch in front and the top notch in sleeve at shoulder seam. Always hold the sleeve toward you while arranging it in the arms-eye. Pin the plain part of the sleeve smoothly in the arms-eye. Draw the gathers up to fit

as notched and fasten at the left side of front.

Three-eighths-of-an-inch seam is allowed on all edges of this pattern, except at the shoulder and under arm, where one-inch seam is allowed, designated by lines of small round perforations. This additional inch is allowed as a safety outlet, because most of the fitting in a waist is done on the shoulders and under the arms.

There are few women nowadays who make a study of the fashions who wear a white waist with a colored skirt, even in the house. The two garments must look as if they belonged to each other to be up to the moment in style. If the fabric does not match, then the color of one must reflect the other.

The economical home dressmaker will use up many of the pieces in her scrap bag to trim her new dresses. Striped fabrics are effectively used on plain materials, while collars and cuffs of a solid color are seen on striped dresses.

The Lady of the Slipper

[CONTINUED FROM PAGE 12]

And Nan "fessed"—that is, as much as she thought was necessary, which included an account of their first meeting, nothing further.

"What sort of looking chap was he?" her father questioned.

Nan described the artist—and considering what a bold, inquisitive, self-satisfied cad he was, her description was remarkably charitable.

"Why, bless my soul!" her father exclaimed, "it must be young Blake. It surely is."

"What, Geoffrey Blake, daddy, the artist that lives in the beautiful bungalow up on the hill?"

"The very same, my dear. We're quite good friends—ride up to town together often. I've asked him to call dozens of times—told him I had a fine little girl at home he'd like to know," he teased her, pinching her cheek, "but he always says, 'If she really were a little girl, Mr. Morrison, I'd come. Young ladies frighten me.' Well, well! He'll come around now, I reckon. Nice chap, Nan. Be sure you treat him civilly."

Later, in the privacy of her room, Nan shook the card out of her sleeve, and perused it.

"Dear little Arethusa—Undine—Lorelei—Nancy Morrison," it read. "The man with the paint brushes is awfully sorry you are ill. He hopes you didn't catch cold when you lost your 'lady's slipper.' If you are better this afternoon, won't you put it on and come down to the brook again? You needn't sit for the picture unless you want to. Please wear the blue frock."

When he saw her coming along the wood path he went down to the brook to meet her. As he took her hand to help her over the cross stones, he said gravely, "It's been polished so fine, I hardly recognized it."

"Where did you find all those lady's slippers?" she returned irrelevantly, but her eyes were very merry and her cheeks adorably pink. "Show me the place, won't you?"

And they started out to find it, but forgot in no time at all that there was anything to find, and sat down under a woodsy canopy, where the blue of her dress, he told her, was like a bit of heaven dropped down beside him.

"And what was really your first impression of me?" she asked him with child-like intimacy.

"Very much the same as my present," he assured her. "That is, sweet but contrary."

Nan looked reproachful.

"Well, I know you're still sweet, and I think you're still contrary. Will you hide your face again if—"

Nan did hide it, but the artist didn't seem to care. In fact, he laughed very softly.

"And what, may I ask, was your first impression of me, little lady's slipper?" he demanded.

"That you were a bold, unsympathetic, inquisitive, self-satisfied person," she answered him frankly.

He laughed outright.

"And has it changed at all, do you think?" he pleaded.

"Well—some," she admitted, looking so sweet and so contrary as she did so that the bold, unsympathetic person kissed her.

"I'll tell daddy," she threatened.

"Which every little girl ought to do," he agreed, holding her close, and evidently not at all afraid of daddy.

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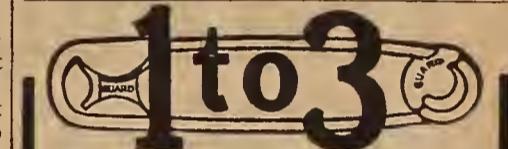
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Sunday Reading

Make the Most of Yourself

DISINTERESTED labor—how little there is of it! How few there are outside of the household who work for others to gratify an intrinsic desire to do good! How few there are who work as Christ does, who works because he loves, and because he must do the will of his Father which is in heaven, which is his meat and drink! How few are there working in life who put forth exertion, not for the sake of what is right, but because their hearts are in sympathy with God's heart and because they desire to work!

Do, then, whatever there is to be done, without questioning and without calculation. Make progress in things moral. If need be, utter stammering words. Would you console the troubled if you only had a ready tongue? Take the tongue that you have. Ring the bell that hangs in your steeple, if you can do no better. Do as well as you can. That is all that God requires of you. Would you pray with the needy and tempted if you had eminent gifts of prayer? Use the gifts that you have. Do not measure yourself according to the pattern of somebody else. Do not say to yourself, "If I had his skill," or, "If I had his experience." Take your own skill and your own experience, and make the most of them. Do you stand over against trouble and suffering, and marvel that men whom God hath blessed with such means do so little? Do you say to yourself, "If I had money, I know what I would do with it?" No, you do not. God does; and so He does not trust you with it. "If I had something different from what I have, I would work," says many a man. No; if you would work in other circumstances, you would work just where you are. A man who will not work just where he is, with just what he has, and for the love of

God and for the love of man, will not work anywhere in such a way as to make his work valuable.—From the Plymouth Pulpit Sermons of Henry Ward Beecher.

Helps Along the Way

Owe no man any thing, but to love one another.—Romans xiii, 8.

Be sure you are right, then go ahead.—Motto of David Crockett.

A man should be upright, not be kept upright.—Marcus Aurelius.

A good name is rather to be chosen than great riches.—Proverbs xxii, 1.

Nothing great was ever achieved without enthusiasm.—Ralph Waldo Emerson.

Seek to see Him in all things, and in all things He will come nigh thee.—E. B. Pusey.

Dost thou love life? Then do not squander time, for that is the stuff life is made of.—Benjamin Franklin.

Do not think it wasted time to submit yourself to any influence which may bring upon you any noble feeling.—J. Ruskin.

To take up the cross of Christ is no great action done once for all; it consists in the continued practise of small duties which are distasteful to us.—J. H. Newman.

Run not in any hasty way of your own. Be patient under the sense of your own vanity and weakness and patiently wait for God to do His own work, and in His own way.—William Law.

So wait to know thy work and service to the Lord every day, in thy place and station; and the Lord make thee faithful therein, and thou wilt want neither help, support nor comfort.—I. Pennington.



From a Painting by H. Hoffman

The Temptation

Then was Jesus led up of the spirit into the wilderness to be tempted of the devil. And when he had fasted forty days and forty nights he was afterward hungry. And when the tempter came to him, he said, "If thou be the Son of God, command that these stones be made bread." But he answered, and said, "It is written, 'Man shall not live by bread alone, but by every word that proceedeth out of the mouth of God.'" Then the devil taketh him up into the holy city, and setteth him on a pinnacle of the temple, and saith unto him, "If thou be the Son of God, cast thyself down: for it is written, 'He shall give his angels charge concerning thee: and in their hands they shall bear thee up, lest thou dash thy foot against a stone.'" Jesus said unto him, "It is written again, 'Thou shalt not tempt the Lord thy God.'" Again the devil taketh him up into an exceeding high mountain, and sheweth him all the kingdoms of the world, and the glory of them; and saith unto him, "All these things will I give thee: if thou wilt fall down and worship me, then saith Jesus unto him, "Get thee hence, Satan: for it is written, 'Thou shalt worship the Lord thy God, and Him only shalt thou serve.'" Then the devil leaveth him, and, behold, angels came and ministered unto him.—Matthew iv, 1-11.

Things Worth Knowing

Russia's Latent Wealth

AT PRESENT agriculture is Russia's principal industry. Russia has a very fruitful soil, a large agricultural population, and she has excellent natural means of transport in her rivers and lakes; but poverty and ignorance among the masses, lack of enterprise and of capital on the part of her business men, and short-sightedness and neglect on the part of the administration, have hitherto impeded the development of her agriculture. The soil is merely scratched by light wooden plows, the most primitive form of agriculture prevails, manuring is practically unknown to nine tenths of her peasants, and there are hardly any roads for transporting agricultural produce to the rivers and railways. Though Russia has much coal and iron, her industries are quite undeveloped. Her industrial backwardness may be gauged from the fact that although her territory and population are twice as large as those of the United States, we produce per head of population twenty times more iron and forty times more coal than Russia. Agriculturally and industrially, Russia is a medieval country.

Many Russians in high official position assert that the latent wealth of Russia is greater than that of the United States, and if they are right, the first task of the Russian government should be to develop Russia's potential wealth. Wishing to reserve the whole of the national wealth to her own people, Russia has so far on the whole discouraged and stifled foreign enterprise, but she has as yet neither enough capital nor enough experience to open up the country rapidly.

If Russia throws the country wide open to foreign enterprise and to foreign capital, and if she treats liberally and even generously those who, wishing to help themselves, will most vigorously promote Russia's prosperity, the poverty and dissatisfaction of the masses and the penury of the Russian exchequer will soon come to an end. Russia suffers from financial anemia.—Nineteenth Century.

New Books for the Blind

INSTEAD of paper leaves, aluminum ones are being used in some of the newer books for the blind. This light-weight metal is well adapted for such a purpose, as it cannot be torn, and the embossed printing characters which are used in all books for the blind cannot be dulled through fingering, as often happens with paper. It is said that these books are much easier to read than the paper ones.

Three Hundred Billion Bees at Work

THREE hundred billion bees made enough honey last year to fill a train of cars long enough to reach from New York to Buffalo. At the low wholesale rate of ten cents a pound it was worth twenty-five million dollars.

Not only did the little workers contribute that vast supply of a pure and delicious food product to the nation, but as they made it they treated it antisepically with formic acid, thus preventing impurities or decay.

In one year the beehives sent to market a crop worth nearly as much as the barley crop; three times as much as the buckwheat crop; six million dollars greater than the rye crop, and nearly nine million dollars greater than the rice crop. All of the rice and buckwheat grown on an aggregated area of 2,126 1-3 square miles did not reach to the value of the honey by \$151,259.

To appreciate these results one must necessarily strive also to appreciate the number of insects at work. That is rather difficult, for three hundred billion stretches a long way beyond intelligent human comprehension.—Technical World.

The Comforts of a Snow House

THE experience of those who tent in the Arctic during the colder winter months is to be summarized about as follows:

When the tent has been pitched the temperature within it is some fifteen or twenty degrees higher than outside, or

thirty degrees below zero if it is fifty degrees below zero in the open; one is damp and warm from the strenuous exercise of the day, but soon becomes cold, and shivers; one crawls into his sleeping bag and makes entries in the diary clumsily with one's mittens on; the heat from one's body forms hoar frost on everything in the tent, and congeals in the sleeping bag, so that it becomes stiff and heavy with ice during the day's travel when it freezes, and soaking wet when one gets into it at night and thaws it out; this in turn wets one's clothing, and the trousers

to end in a circle the size of the desired ground area of the dome-shaped hut; then, on the principles of architecture that apply to domes, whether made of stone or snow, the beehive house is completed. Two men can in an hour build a house large enough for eight to sleep in. When the house is completed, a doorway is cut in its side near the ground, skins are spread over the floor, one brushes himself as clear of snow as possible and crawls inside. The oil lamps are then lit, and the house is soon brought to a temperature considerably above the freezing point;

for snow is one of the best-known non-conductors of heat, and the intense cold of the outside penetrates the walls only to a very slight degree. But when the house gets warm the inner side of the snow dome begins to thaw and the water formed is sucked up into the snow, blotter fashion; when this water penetrates far enough into the snow to meet the cold from the outside it freezes, and your snow house is turned into an ice dome so strong that a polar bear can crawl over it without danger of breaking through.

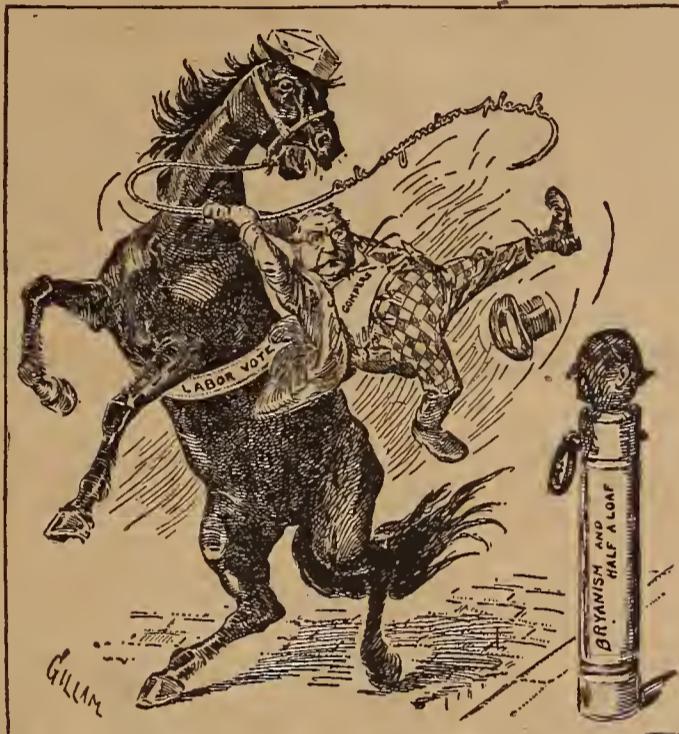
When once inside the house the Eskimos strip naked to the waist and hang their clothes to dry on pegs in the wall. On some journeys we had sheet-iron stoves (procured from whalers in former years), which we installed in the snow houses, and in which we built roaring fires.

One is well placed to take comfort in the ingenuity of man overcoming a harsh environment when, sitting snug, warm and lightly clad, one listens to an Arctic blizzard whining helplessly over the ice vault that two hours before

was an oval snow bank. There and coat freeze stiff as sole leather when one breaks camp in the morning.

When one follows Eskimo methods, however, the conditions are markedly different. On any treeless open area of compactly drifted snow is easily found; the snow knives (of bone or iron, according to circumstances) are brought out and the surface of the drift is divided into blocks of domino shape, say fourteen by thirty inches and four inches thick; these are then placed on edge and end

was no cold to make the hands numb in writing the diary, no frost to congeal on the bed clothing and make it wet, none of the night's discomforts and the morrow's forebodings that have been the stock in trade of the makers of Arctic books. And when we broke camp we did not burden the sled with an ice-stiffened hundred-pound tent, but stuck in our belt the ten-ounce snow knife, our potential roof for the night.—V. Stefansson in Harper's Magazine.



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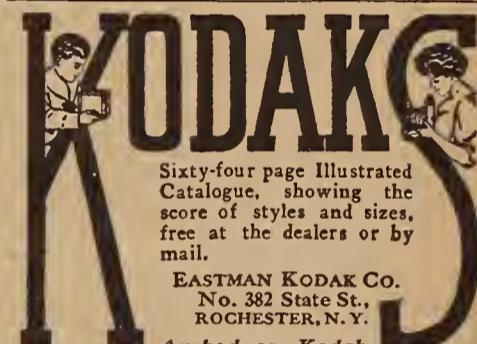
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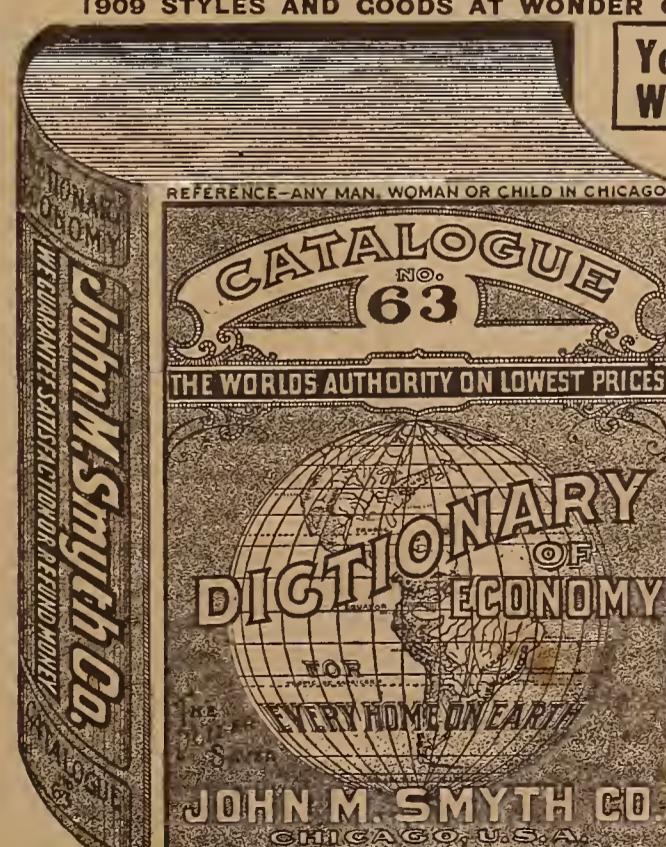
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Farm Notes

Carbonaceous Matter in the Soil

I HAVE read W. Milton Kelly's article in the July 10th FARM AND FIRESIDE, entitled "Manure and Its Relation to Plants," and studied it carefully. While he says many good things and his views are all right in the main, it seems to me that he is laboring under a wrong impression as to the use of carbonaceous matter in the soil. He seems to convey the idea that the growing crops depend mainly, if not entirely, upon the soil for the carbon which is built into the body of the plant. He speaks of sandy soils being deficient in carbon, and of humus soils which contain plenty of carbon for the use of the plant.

As I understand it, carbon in itself is not a plant food, but is a good absorbent of nitrogen and of moisture. Carbonaceous matter in the soil is a great help in conserving moisture, and it is also necessary in order to promote bacterial development in the soil. Professor Steele in his work on chemistry says that pure carbon will absorb twenty times its weight of ammonia. There is a small amount of ammonia in the air that is partly at least absorbed by the carbonaceous matter in the soil and held for the use of growing plants. The carbonaceous matter in the soil aids greatly in conserving moisture, as is readily seen when we compare a humus soil with a sandy soil during a dry spell.

As to the plant foods which are usually found necessary to be applied to a soil, nitrogen, potash and phosphorus are the three kinds of food generally recognized. Upon the other hand, when we consider the plant's source of supply of carbonaceous matter, this comes all, or nearly all, from the air, and is absorbed into the plant by means of the leaves. The leaves of plants are the organs of respiration. They take in carbonic acid by absorbing it directly from the air; the carbon is largely retained by the plant, and the oxygen is again set free into the air. This action is the reverse of that which takes place in the animal life, since animals take in oxygen from the air, which is retained, and the carbonic acid is thrown out of the body when animals breathe. Animals when breathing enrich the air for the plant life, and growing plants purify the air for the use of animals. In this way the great bulk of dry matter of plants is built up. When vegetable matter is burned or allowed to rot, the carbonic acid is set free into the air again, to be reabsorbed by growing vegetation.

Nitrogen is the only element of plant food that is found in the air which is absorbed to any great extent through the roots of the plants, and this must be in a combined form before the roots can feed upon it. The other foods absorbed from the soil by means of the roots of plants are all minerals, and when the plants are burned they are recovered in the ashes, while that part of the plant which came from the air escapes to the air again in the form of gas. A. J. LEGG.

Agricultural News-Notes

The overabundance of poor hay, which has lowered the average price for that which is good, is now to be checked. The New York Hay Association has decided not to handle bad hay, but to leave it on the farms, where it can be used in some way.

The celery growers of California have now under cultivation over six thousand acres of the famous peat lands of Orange County. The crop of 1907 netted the growers over a million dollars. The land is valued at four hundred to five hundred dollars an acre.

The Loganberry, which has the combined flavor of the blackberry and the raspberry, was originated by Judge J. H. Logan, of Santa Cruz, California. An average yield an acre in that state is said to be five hundred crates of twenty-four pounds each.

The recent arrival at New York City of a cargo of oats from Argentina is said to be the first importation of grain to the United States that has ever occurred. In the production of corn, wheat and oats we are to have a formidable rival in Argentina and Uruguay.

The science of forestry which has led to such beneficial results in Europe has now become of especial importance in this country. The general government has not only wisely undertaken the work of preventing the needless waste of timber, but has also undertaken the planting of millions of trees on public lands wherever it is practicable.

The United States Department of Agriculture bill provides for ten thousand dollars for experiments in the destruction of the green bug which last year caused so much trouble in the Southwest. The total appropriation for the use of the department for the coming year amounts to about eleven and a half million dollars.

The scope of the work of the Bureau of Statistics of the Department of Agriculture has of late been much enlarged. Formerly only the staple crops were included. Now, however, tomatoes, cabbage, onions, beans (dry), apples, peaches, grapes, pears, blackberries, raspberries, melons, hemp, broomcorn, sugar (cane and beet), hops and peanuts are included.

Let us awake to our opportunity and duty. Let us begin now to make our country schools more attractive and useful, so as to make country life more worth the living. And let us not forget that as our children are educated to-day, so will they make for the progress and prosperity of this country in the near future.

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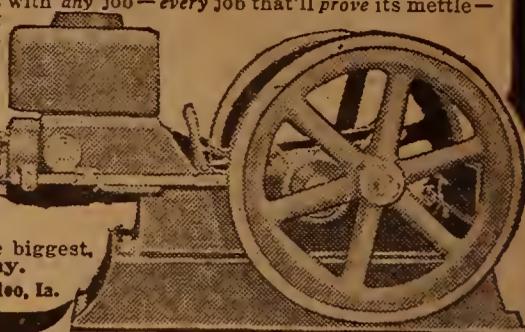
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FARM AND FIRESIDE

Vol. XXXI. No. 24

Springfield, Ohio, September 25, 1908

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A Poet Horticulturist A Sympathetic Account of the Life Work of Benjamin Hathaway

AMONG the few men who, before the days of Luther Burbank's more striking work, fanned the fires of devotion at the altar of experimental horticulture was Benjamin Hathaway, in southwestern Michigan.

A Corn Builder

After spending thirty years in originating what is still grown and known as "Hathaway's Improved Yellow Dent Corn," his life closed about the time popular interest in seed testing and breeding was taking foothold. Probably Mr. Hathaway surmised something of the part his contribution would play in the coming development of the king of crops, for he was of the type of men who work with an eye on the future. In his own state it has been observed that more growers of the Hathaway corn have been enthusiastic and have taken pride in the corn they were producing than the growers of any other breed. His experiment was then in a little-tried field. The terms "pedigreed corn" and "seed breeding" were scarcely coined; and the way in which Mr. Hathaway made a new kind of corn was entirely unorthodox, judged by present corn-breeding methods. He planted seed from the best specimens of many varieties, and from the product of this conglomeration laid the foundation of his famous strain of dent corn.

A Landscape Gardener

I count it a rich inheritance that my childhood home lay side by side with this man's beautiful and intensely cultivated acres. Most unwonted were the methods practised to get returns from those acres, and few people in the community understood their significance sufficiently to see in them the real mission of that fine old farm. Making a new kind of corn, growing vegetables under glass, cultivating fields of shade trees, and so forth, were often looked upon as eccentricities to be expected in a "farmer poet," as the owner was best known. The fact is, his chiefest oddity lay in his handling things commonly grown on a farm in an unusual manner. The gangs of men and boys carrying out his instructions probably never heard a farm called a laboratory and knew little or nothing of the mighty forces of plant heredity and subtle influences of fertilization they were helping to coerce into greater service to humanity.

The smell of the box borders along the paths of the tiny formal garden that lay in front of this place's smooth, plush-like lawn, itself in turn bounded by thick arbor-vitae hedges, comes back to me now. I can see yet the fine old pines, close trimmed to the winds, the rare lilies and roses, the yuccas and fennel in the corner, the choice exotics, and the primroses that opened at twilight. The trueness, compactness and sort of old-worldness of it all—set down as it was in the midst of ampler farm grounds—was strikingly different from the large, loose habits of most farm "dooryards." I always entered it with awe, and edged timidly up to the vine-shaded porch of the white house with green blinds. I can see the towering presence of the poet farmer's aged mother as she appeared in response to my timid knock—that Spartan mother of whom her son said, "What a statesman mother would have made if she had been born a man!"

and of whose fourscore years later he wrote:

A life unused of dread,
In trust serene, in hope triumphant still.

That dooryard garden, set close with choice shrubs and plants from the best nurseries and conservatories in the country, and kept with the art of a connoisseur, was a sample of the entire farm. Whether one visited the owner's vineyard, his vegetable garden, his fields or wood lot, experimental work was found in every one—something his neighbors were not doing. All evidenced the tireless industry of a watchful master mind in the selecting and culling of varieties, and in cultivating, propagating and harvesting their fruits. Moreover, here, with all the experimenting, the livelihood for a large family had been eking out. Coming from New York State to this then Western farm, with scarcely a pittance beyond the land itself, Mr.

Hathaway was left head of a family of eight when just of age. Besides, he had had no schooling since he was twelve years old. With these commonly called handicaps, he compassed in sixty years as much as is usually expected of three ordinary men. The Hathaways came to their Michigan farm in 1837, and lived in what one of their pioneer neighbors says was the poorest log house she ever saw. Eleven years later they built a commodious frame house from lumber saved from their wood lots. This house was at once remarkable among farm homes, for it had the "luxurious" appointments of a cistern in the kitchen, a pantry, a brick oven, a wood shed and a bath room.

An Early Forester

Supplementing the farm proceeds with the income of a lively cooper's trade, Mr. Hathaway year by year increased the number and value of the plantings upon his farm, and did so in such taste that in 1865 the state board of agriculture awarded to it one of the premiums offered for the finest farms of the state not exceeding two hundred acres in size. Considering the urgent means necessary now, in the face of a timber famine, to promote active forestry interest, it is good to see what the committee said, in giving this prize, more than forty years ago:

"Your committee would direct attention to the planting of trees found upon Mr. Hathaway's farm. On portions of his woodlands which had been cut off he had set out in rows, like the trees in an orchard, eight hundred and ten hard maples, two hundred and fifty white and blue

ash trees, two hundred and fifty black walnut, one hundred and fifty butternut, one hundred and eighty soft maples, one hundred and eighty white pines, thirty Austrian pines and ninety Norway spruces, which, added to the one hundred and seventy hard maples and eighty white pines planted by the roadsides, make a total of 2,190 trees, a portion of which show a vigorous growth and form an experience in tree planting the equal of which we do not have in the state."

A Pomologist

Mr. Hathaway was a charter life member of the state horticultural society, and frequently reported results of his experiments to that body and the farm press. Upon one such occasion he reported that he "had tested the greater part of the new varieties of potatoes for fifteen years;" upon another, "I have not done as much experimenting for four years past as I most usually do, but have

one hundred and fifty to two hundred seedling raspberries," from which he hoped to get a thornless variety. To him the most promising field for experimental work lay in producing new varieties from seed. For more than twenty years he persistently seeded the wild strawberry, and followed up the most hopeful results. His ideal strawberry "should be a sure producer under all circumstances, at least under all circumstances in which it is reasonable to expect fruit. To this end it must be hardy, as hardy as the native, the old Virginia Scar-

let." Throughout his neighborhood it was agreed that the "Hathaway strawberry," when he finally approached his ideal, possessed these qualities and combined with them the delightful flavor of wild fruit. An unusual vigor and resemblance ran through all the strains he produced, for he did, in fact, originate several berries that went upon the market. The story runs locally that one of these berries, after changing hands two or three times, came into possession of E. P. Roe, who made ten thousand dollars from the sale of its plants.

Mr. Hathaway was recognized as an authority upon apple, pear and grape culture, his orchards and vineyards being plots from which specimens were sought for all educational pomological exhibits. During his later life he gave much attention to the introduction of Russian varieties of apples, in the hope that they might revive the already depleted orchard industry of his locality. One scarcely passed "Evergreen Lodge" without being stopped to look upon some special nicety of coloring, to taste the fineness of flavor of a

new fruit, or to hear the result of some test in fruit improvement.

While this ardent lover and student of Nature found personal reward in the perfecting of fruits, commercialism was not neglected. At first his thriving cooper shop supplied fruit packages, mostly out of timber from the place; later, for a number of years, an evaporator preserved his own and the surplus fruit of the neighborhood; his splendid chestnut orchard sent shipments of barreled nuts to the cities; the maples of his own setting furnished an active sugar bush each spring, and the sale of nursery and garden stock of all kinds added not a little to the resources common to all farms.

An Idealist

Here was a man with the head of a philosopher and the face of a poet who loved downright hard work. A smaller soul would have called his self-imposed tasks "dirty work," but he was too conscious of the living possibilities of a handful of soil to despise it; he delighted to extract from its mold lovely forms possessed of delicate shades of flavoring and tints of ethereal beauty. An inner perception of the ideal in all these outward things his hands toiled over, made for him a world unknown to the stolid realist. He was, in very truth, a poet and philosopher, who went about his farm work in plow shoes, often with brimless hat on his head, and dressed in colored shirt and overalls. It was part of his interpretation of life to live above conventions, to seek growth in things of the spirit, and to be useful to his fellow men. He could discuss theories of Spencer or Hegel or Kant; but he liked best to lead one simply to the wisdom of Swedenborg, by whose teachings he had shaped his beliefs from childhood.

Mr. Hathaway's disregard of conventionalities reappears in an encounter between him and a colored waiter that took place once in a Chicago hotel. He was in the city to see about having a volume of his poems printed. The day being warm, he went in to dinner with his coat on his arm, put it on the back of a chair and sat down at a table alone. A punctilious servant who came to wait upon him saw only a rough-garbed man in his shirt sleeves. It was too much for his sense of propriety. He peremptorily ordered Mr. Hathaway to put on his coat, upon which the latter replied that he was more comfortable as he was. Failing to reduce the farmer guest to his plane of conventionality, the waiter departed and brought the proprietor back with him. It chanced the proprietor knew Mr. Hathaway, and upon catching sight of him, held out his hand with a hearty "Why, hello, Hathaway, old poet, I'm glad to see you;" then, remarking upon the heat, took off his own coat and sat down at the table, giving his dinner order to the discomfited waiter.

Writing was the natural vent of this busy man's great brain and soul. Above his cooper's bench he built a shelf, where he set his book, that he might study while he made barrels. Here, too, he wrote verses that sung themselves to him while his hand swung the hammer. In the field the winged words ran through his brain, and he jotted them down on a bit of board or paper while the horses rested

[CONCLUDED ON PAGE 2]



Benjamin Hathaway

Why the Corn Crop Failed

I HAVE been looking over miles of corn fields and making a good many inquiries concerning the methods of growers. When I found an extra-good field I would ask the owner how he managed his planting and cultivating, and when I saw a poor field I would make similar inquiries. The information thus obtained on how to do and how not to do would fill a volume.

There is a lot of very poor-looking corn in the country. It is not all late, but very much of it is. I saw fields in early August in which the plants were not more than two feet high—just about as they should be in May or early June. These never will produce a crop of grain. One field in my own neighborhood I have watched all the season. The owner made no attempt to plow or get in the crop during the wet weather we had in the spring, but he waited until he could plow the whole before he planted a grain. There are forty-five acres in this field, and the owner will not get that many bushels from it. Half a mile distant, in a thirty-acre field that much resembles the little patches of sweet corn we see in some gardens, the earliest planted is being finely eared and bids fair to make a yield of fifty or more bushels to the acre, while the last planting is about two feet high.

This farmer said he plowed and planted between showers, as he could. He said, "Throw a handful of corn on the ground in early spring, rake a little soil over it and see it spring up and grow. It will come up and grow if we have rain every day—in fact, if we have anything but freezing weather. It may look a little yellow, it may make rather slow growth while the rainy weather lasts, but it will come out all right later. My knowledge of that fact led me to prepare my land as I could, between showers, and plant as fast as the land was prepared. That's how I came to have such a queer-looking field of corn."

He plowed, harrowed and planted a strip whenever the land could be worked, covering the seed with as little soil as possible. He had his little boy follow the planter with a hoe and cover the seed wherever the planter failed to cover it. One tract of two acres was a little too sticky for the planter to work in, so he marked out the rows and planted it by hand, covering the seed an inch or less deep with a hoe. This made a perfect stand and bids fair to yield fifty bushels to the acre. He said he would have planted all by hand if he could have obtained the necessary help. The wheels of the planter packed the soil so that it quickly hardened, and unless the seed was very near the surface the sprouts failed to break through.

However wet the soil may be, corn will start to grow all right if it is near enough to the surface, while it will surely rot if covered deep. I planted a small patch by hand, covering it with the hoe not over half an inch deep, and the stand is perfect, though it rained almost every day for two weeks after it was planted. In cultivating the first time over, the cultivator shovels were run as deeply as possible and the soil well dug up. Afterward the shovels ran only about three inches deep.

Many a farmer now sees where he missed it in not planting between showers whenever the soil could be worked. Every early planted field that was properly worked and kept clear of weeds looks well and will give a good yield. Those who were farming too much land, and put off their plowing and planting until the soil got into good condition, will have very little corn. It seems a little queer to see a field of ten to twenty acres of corn that promises a yield of fifty to sixty bushels to the acre, and just across the road another field that is too late to make anything but fodder. I have seen hundreds of such. And inquiry invariably develops the fact that one man prepared his land quickly, planted the seed very shallow with the planter or by hand, while the other waited for dry weather.

I saw one field of thirty acres of corn belonging to a man who has farmed more than forty years that will not make a crop if frost stays off until December. It would seem that a man of his age and experience would certainly have sense enough to plant earlier or not plant at all. Not half a mile away is a ten-acre tract of corn that will yield fully seventy bushels to the acre. The owner is a young man whose experience is limited to four years. He said it was time to get corn in if one expected to raise anything, and as the main part of the farm was too wet, he plowed up this little ten-acre pasture and planted it at once.

the work being done between showers. He managed to get some planted in the back field, about twenty-five acres, by going at it on the jump when he got the chance, and some of it will make fifty bushels to the acre, but the last planting will make only good fodder.

For years I have contended that there is more money to be made in farming just the amount of land that one can farm thoroughly. A yield of sixty to eighty bushels to the acre from ten acres costs less than a yield of twenty to thirty bushels to the acre from twenty acres. It will pay every farmer to put ten acres in perfect condition and seed it right if he never gets another stroke done.

On one farm I saw fifteen acres of splendid-looking dent corn, and right alongside of it about twenty acres of short stuff that was tasseled out. I stopped to ask the owner what he was growing. He said, "That fifteen acres is my best and driest ground, and I got it planted early by watching my chances. The other I did not get planted until the latter part of June, when, according to my experience, it is too late to plant our dent corn with the expectation of

"Say, Brother Bowman, how do you expect to ever pay Sid Palmer for that eighty of his, and pay for this new house?"

"Well, I'll tell you, Sam. I gave up the idea of Sid's eighty, and am not going to buy any more land."

"Ahem! Say, Bowman, you haven't been sick or anything, have you?"

"No. I'll tell you just how it is, Sam. You know my girl Macy. Well, Macy's been living with her Aunt Jane in the city, and working in a store; they have been trying to persuade me to build this house for a long time. Aunt Jane says the way to keep the boys and girls at home is to first build a home. She says this generation of farmers is land mad and that they all work too many hours, don't have any comforts or luxuries, says we are all trying to get another eighty for the children, and don't properly work the land we now have. She says if the children are worth anything, they will soon get the eighty, and if they are not, they wouldn't keep it if we gave it to them. She says we had better take it a little easy, read the farm papers more, and do more head work and planning; ten hours

muscular work. We sell everything over the phone before we take it to town, and always get the top price or we don't sell. No, sir, we could not do without the library, as every one in the family uses it, even to the hired man. And say, Sam, since I have built this house with a decent room for the help I can almost take my pick of the help in this section, and the two boys and Macy—well, you could not drive them back to the city.

"Yes, the living room is large, but we could not do without it, either. It is the resting place for all the family in cool weather. You see, with the three rooms connected as they are, by the large arches, instead of doors, they seem much larger than they really are, and the temperature is always the same in all three of them. We made a mistake by not building a double fireplace in that corner next to the living room, so we could have an open fire in both rooms, but we will build it later.

"Yes, one of these bedrooms is for Macy, and the other for me and the wife. The boys and help have two nice rooms upstairs. Now the kitchen, you see, is handy to the dining room, and the sink with both cold and hot water saves the women folks lots of work. Then the pantry, here, has flour and meal bins, bread, cake and pie boxes in this drawer, and all these shelves for other stuff.

"Here is the bath room, with hot and cold water. No, sir, we think more of the bath room than of any other room in the house. Every one of the family seems to have better health, and the pleasure and comfort of a nice bath after a hot, dusty day—well, Sam, just come over and try it and you will not be long without a bath room.

"Too big! What? This back porch? No, sir. We eat out here in warm weather, and look at those hammocks and big easy chairs. We all come out here and talk things over, and the screen keeps out the flies and other insects. No, sir, we wouldn't take five hundred dollars for that porch.

"Now come down and see the hot-air furnace. You see, the fresh air comes in through this pipe and is heated in this drum around the furnace, and passes to each room through these pipes. You can turn on as much or as little heat as you wish. It requires only one fire to heat the entire house, and the cost to install this furnace was much less than the price of four modern stoves.

"What did all this cost? Well, Sam, it did not cost a cent. I made over five hundred dollars by building it. You know, I wanted to sell this two hundred and eighty, but I could never get an offer of more than fifty dollars an acre on account of the old barn of a house. Well, since the new house was finished, several neighbors have offered me fifty-five and fifty-eight dollars, and a fellow from the city wanted to give me sixty dollars, but the folks would not let me sell. So you see, while the money is not in the bank, it is in the farm, and I can get it any time I wish to sell. The extra price I am offered will pay for the house and leave me over five hundred dollars more than I could have received before the house was built. It doesn't look so bad from the outside, either, does it?"

FARMER BOWMAN.

A Poet Horticulturist

[CONTINUED FROM PAGE 1]

at the end of the furrow, or made note of them when in the testing plot he worked over his beloved seedlings. At night, when his men were stretched in exhausted weariness for their well-earned rest, or were tramping noisily across the country to the village store for a gossiping revelry, the light streamed from his study window, and within the farmer poet worked late over the "second crop" his fields had yielded him that day. Well did he know whereof he wrote when he penned:

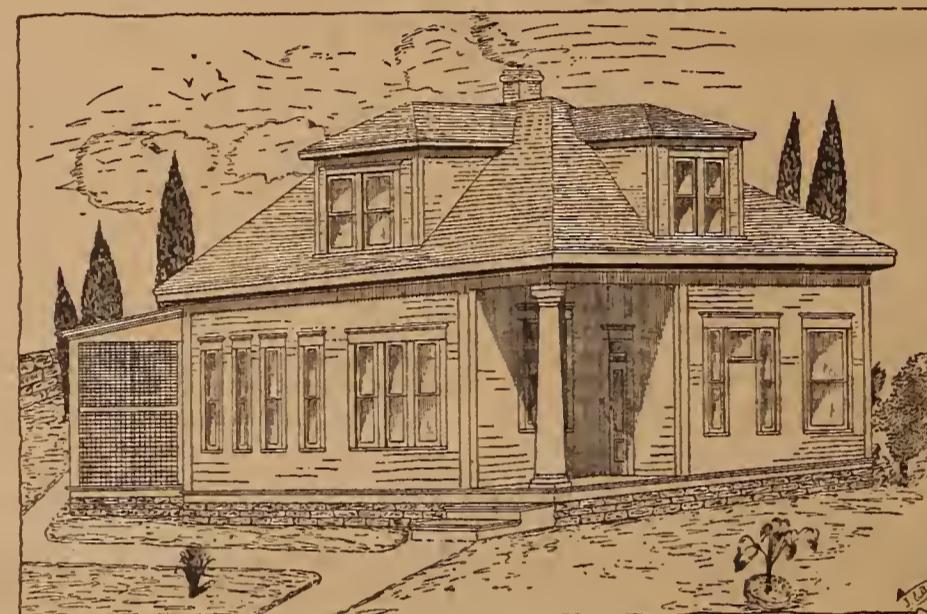
Joy to the Toiler everywhere!
Still let his hand be plied;
Wide plant the rose to blossom fair
In many a desert wide;
A richer blessing year by year
Win from old Mother Earth;
A purer household altar rear
By the endearing hearth;
Let wiser Thought to Labor given
Redeem lost Eden's soil;
Then fair shall bloom the flowers of heaven
In the sweet homes of toil.

The lifelong guiding principle of this all-too-little-known benefactor of men found trust expression in one of his own couplets:

Do thou thy work, and trust the gods' decree
That as they work thy recompense shall be.

JENNIE BUELL.

My New House, and What It Cost



PERSPECTIVE VIEW

raising a crop, or even half a crop, of marketable or feeding corn. For a time I was undecided whether to let the land lie fallow, sow it with some kind of small grain for a cover crop, or plant it to corn for fodder. I wrote to a Minnesota seed firm and got enough seed of their little early stuff to plant the field, and planted that. It is tasseled out and the ears are showing nicely, and a Minnesota man tells me that it will make a crop of sound grain if we do not have too much wet weather in the latter part of the season. I have cultivated all my corn thoroughly, and it is making a fine growth, as good as I ever saw."

I saw great fields of corn that will not return the seed planted, yet they plainly showed that hundreds of dollars' worth of work had been done on them. One would pass these wondering what the owners expected when they planted them, or what process of reasoning was going on in their minds, and then we would suddenly come upon a field of splendid corn, which would instantly set one to wondering: How is this? How did he do it? Inquiry invariably showed that the owner was a prompt-acting man who took every advantage of the weather, and was sharp enough to cover the seed very lightly when the soil and weather both were wet. One can rest assured that the seasons will not change for his benefit; that winter will come along about the same old time, and that it will require about as much time as usual to grow and mature a crop. This being the case, it will show plain common sense on his part to get the seed planted early enough to give the plants a chance. I never yet saw a season when this could not be done on portions of almost every farm.

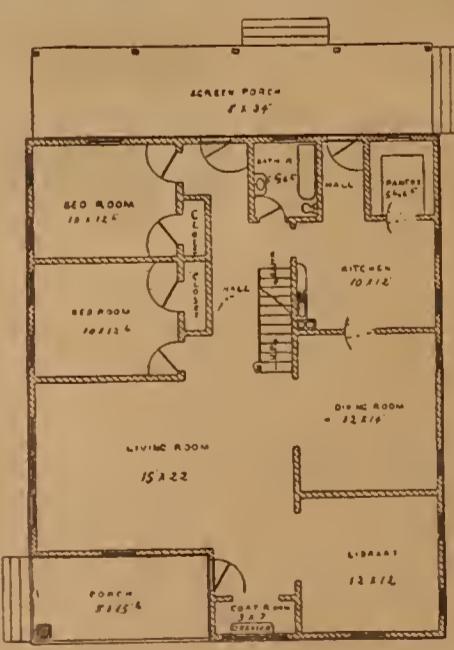
FRED GRUNDY.

Jingles for Farmers'

There's Samuel Shirk, who wouldn't work,
And isn't worth a penny;
But William Work worked every day
And gathered dollars many.

Honest John will tell the truth,
E'en though he shames the devil;
But Charley Cheat, with his sleek tongue,
Follows the way of evil.

M. L. PIPER.



FLOOR PLAN 36' x 61' 10"

cloak room. That window over the dresser lets in plenty of light for the women folks, so they may be sure to get their hats on straight; and we men have a handy place for our coats and hats.

"This is the library. That? Oh, that is the wall shelf for the farm papers; we do our planning for most all of the work in here. And I tell you, Jane is right; it pays to do some head work as well as

Around the Farm

Items of Interest and Value to the Progressive Farmer

Farming Under Territorial Difficulties

If you should make a trip from Niagara Falls, New York, east, as I did a few days ago, following the great Niagara River to Buffalo, and thence starting over the Delaware and Lackawanna Railroad toward the eastern metropolis, you will have the opportunity of observing a great diversity of agricultural conditions and phases.

At first you pass through the famous fruit region of Niagara County, a flat country with thrifty apple and pear trees, and limbs bending under the load of fruit, the soil composed largely of a fertile clay loam either artificially drained or standing in need of artificial drainage. For a considerable number of miles east of Buffalo the level character of the land continues, although the soil may gradually change to a gravelly loam, being devoted mostly to cereals and general farm crops. Further on the landscape shows a tendency to assume an undulated character; but approaching and traversing the Genesee Valley, still brings to view wide stretches of level fields of cereals, beans, cabbage, peas, etc. After that the surface soon shows its "ups and downs." We are getting into the "rolling" sections south of the numerous little lakes—Conesus, Hemlock, Canadice, Honeoye, Canandaigua, etc.—and have entered the territory "where the big potatoes grow." Here everything is hill and dale. A perfectly level field is a rarity. Often it is either hillside or impenetrable swamp; occasionally perhaps a cleared and drained piece of muck land. The wider valleys between the ranges of hills give in some instances level bottom lands of great fertility, the soil itself varying through all shades of loam—mucky, sandy, clayey—and frequently producing enormous crops of whatever is planted.

I have had some experience in farm operations on the gravelly loams of this region of the little lakes—hill experience; then, some years later, some "level experience" on the sandy loams in the northern part of New Jersey; also, at least an experience "by observation," on the sand plains of the central part of that state, and finally, for nearly twenty years, some dabbling in farm and garden and orchard work in my present location, on the strong loams of this famous fruit region in the extreme western end of the state.

Sometimes, when the eye as from the car window wanders over the broad acres of a level country, taking in the view of the perfect, uniform, string-straight furrows freshly turned by the plowshare, or the rows of corn or potatoes in long, unbroken lines, or the sea of waving grain, and then, when we compare all this with the knolls and swales, the ups and downs, the tortuous course of the rows of the hoed crops on the hillsides, the tracks left down the steep inclines by the chained hind wheels of wagons loaded with hay or grain, we may feel inclined to envy the farmer "on the level" for his chances, and pity him "on the hills" for the difficulties of his location.

I find, however, that such envy is often without foundation, and pity wasted. Success depends more on a level head than on level land, and most largely on the man behind the plow.

From the car window, on the Delaware, Lackawanna and Western Railroad, between Buffalo and the Genesee Valley, I saw some of these stretches of level lands in oats that would not yield twenty bushels to the acre, and corn so thin and backward that even with a favorable and long fall the yield of sound corn could not be expected to be other than very light. Yet

on the hillsides and on the crests and knolls of Ontario and Steuben counties I came across many fields where the oat yield would surely exceed fifty bushels to the acre. The illustration shows one of the grain fields high up near the hilltops in Ontario County at harvest time. Just behind the man on the reaper and beyond the outline of his own field appears the crest of another range of hills, some miles off toward the south, near the Steuben County line.

The farmer "on the level" may wonder why a person should choose to go to (or remain in) these hilly countries, to work among stones, run up and down the hillsides, and farm under all the obvious or apparent difficulties and inconveniences of such territory. Yet the fact is that the hill farmer is just as happy, just as successful, just as well off, as the farmer of the plains. It is true there is much waste land—barren knolls, gullies, ravines, swales. There is a wealth of stones, and maybe big boulders, and there are swamps not easily accessible or redeemable. But land is cheap. The farmer can pick out the best and most accessible fields for regular cropping, and leave the balance for woods or pasture. The ravine is a good place for dumping stones and other rubbish. The land is easily fitted for crop production. It never bakes. It falls to powder on the mere touch of the plow, and the latter is easily kept going by a span of light horses. On the clay loams in our level sections our real work only just

fertilizers. There is chance enough to increase the yields of the various crops there as well as on the "flats," and the means to do it are pretty much the same in either case. The loams of the "flats" usually contain more potash than do the higher soils of the hills. In many instances, however, the long-continued planting of cereals has reduced the supply of phosphoric acid in these soils, and the application of that element, most cheaply in the form of dissolved South Carolina rock, is the most natural thing to think of. Yet what would it amount to without clover rotation? Clover, more clover—that is really the solution of the fertility problem on the hills as well as in the valleys, and the one thing that will help over many difficulties to success.

T. GREINER.

Winter Oats

In a large part of the country where farmers desire to grow oats they are not satisfied with results obtained from sowing the spring varieties, and naturally they are inclined to inquire after the winter varieties.

Of winter oats, Professor Hunt in his book "Cereals in America" has this to say:

"There are spring and winter (fall) varieties of oats. The winter varieties are principally grown south of the southern boundary of Virginia, Kentucky, Missouri and Kansas, or about thirty-seven degrees north latitude, where they

the ground faced the south very few, if any, of the oats were frozen out.

My farm lays near thirty-nine degrees north latitude and from thirteen hundred to fourteen hundred feet above sea level. I grow the Virginia Gray or Turf oats, sometimes called Winter Turf oats. I have tried the Appleton oats, but do not like them as well. If sown early in the spring, the last of February or early in March, the winter oats will make a very good crop, but do not do as well as when sown early in the fall.

I am often asked how many bushels of winter oats can be grown on an acre. A neighbor told me a few years ago that he pastured a small flock of sheep all winter on three acres of winter oats and thrashed seventy-five bushels of oats from the three acres the next summer. I have known winter oats to yield from forty to forty-five bushels to the acre. At the Alabama Experiment Station the winter oats yielded double the oats to the acre that the spring varieties yielded.

We quote the following from Professor Hunt's "Cereals in America" taken from the Georgia Experiment Station report:

"On the station farm we have found, even when the drills were laid two feet or one and one half feet apart, using a common scooter plow, or, better, a single-row fertilizer and seed distributor, that oats so sown always produce a larger yield than when sown broadcast and harrowed in; but a more important discovery is the fact that when the seed is sown in open furrows and barely covered, leaving the furrow open or unfilled, the oats plants are very much less liable to be killed by a severe freeze."

I have often noticed a marked difference between the appearance of bunches of oats standing in furrows and those exposed on the general level of the ground. Just a slight furrow, one made by the common wheat drill, will do much toward protecting both wheat and oats from severe freezes.

I can see no reason why winter oats could not be grown as far north as the southern boundary of Ohio. A prominent institute lecturer told me last summer that winter oats were successfully grown along the Ohio River north of Parkersburg, West Virginia. While I would not recommend the large sowing of winter oats until they have been tried, still they are worthy of a trial wherever it is too warm to grow spring oats successfully. Small sowings in August and September for a year or two will show whether they will succeed.

A. J. LEGG.



Farming Under Territorial Difficulties

begins after the plowing is done, and the plowing is often hard work for a team of heavy horses. We have to use the roller and the disk pulverizer and various styles of harrows in order to get the lumps broken and the land in fine tilth. The hill farmer plows his land, goes over it with the harrow, and is ready to sow or plant.

Among the crops grown in these hill sections are special money crops, too. We used to grow hops, often with considerable profit. The woods were full of hop poles to be had for the cutting. Then there are blackcap raspberries, and of these we now find many fields on these hillsides and hilltops. Of course, the prices for the product (mostly evaporated) vary greatly, although perhaps not as much as hop prices used to vary. Usually the crop pays fairly well. But the potato still continues to be the leading money crop, and with the big yields often obtained, with the labor-saving planters and diggers, and the generally improved methods of culture which have reduced hand labor to a minimum, it is of all crops the one which brings cheer and comfort to the firesides of these hilly regions, and frees the homes from debt.

One of my friends "from the hills" just asks me what substances raspberries take out of the soil. His idea is to increase the yield of berries by the use of

are the chief varieties grown. The area of cultivation of winter oats is gradually extending northward. Where successfully grown, they are to be preferred to spring varieties, because of their more vigorous early growth in the spring and their early ripening."

The winter oats have been cultivated here in south-central West Virginia for more than twenty-five years. They have never been known to fail to fill well here when sown early in the fall; the only danger is in their winter killing or heaving out by the frequent freezing and thawing of the ground. There is not much danger of this if the oats are sown early in the fall. They may be sown as early as the first of August, and pastured off by calves and sheep; or else just let the freeze kill the blades down, and they will help to protect the roots from freezing out.

I sowed a four-acre plot about the middle of last September on a badly exposed field where the snow was inclined to blow off and drift beyond the oats, and very few of the oats were damaged by the freeze. Another half-acre plot was sown just above my wheat, November 1st. I looked over this plot of late-sown oats and compared it with the wheat sown the same day. At one end the ground faced the northwest. Here the oats were badly frozen out, but where

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Review of the Farm Press

What Others Are Saying About Important Farm Matters

County Fairs as Educators

PERHAPS one of the greatest neighborhood educators we have to-day is the county agricultural fair, provided it is run properly. It is the one season in the year when farmers of a community come together, all interested in the same cause, that of the farm and its products. By comparing their exhibits with those of the neighbors they are induced to work for improvement. The premium won is of little moment as compared with the incentive for improvement gained, if it be won honestly. That man who takes an interest in his county fair and exhibits his farm products and live stock is bound to be a better farmer than if he paid no attention to this annual gathering. He gains an incentive to cultivate his crops better and to keep better stock, and the wholesome competition that is stirred up in the exhibitions is bound to work for good.

There are many county fairs where the matter of amusements is given greater consideration than the exhibits of agricultural products. Side shows are patronized and the things for which the fair was fundamentally established are neglected. It is right and proper to mix amusements with educational features, but they should not take first place. A little wisdom on the part of the fair directors would result in an improvement in this regard in many instances. We believe the fair directors should be farmers themselves, and not town merchants, as is often the case, for a farmer is better able to decide what is best for his own class than are those who are not in touch with them except to sell to them.

In many instances the county fair furnishes the only holiday the farmer takes throughout the crop-growing season. If he does not take this he is not acting most wisely, for a few days spent meeting friends and acquaintances and viewing good live stock and other farm exhibits is well spent, even though he does not wish to make a display.

In the matter of making an exhibit a farmer can well afford to send in something to show at the fair, if for nothing more than the benefit of advertising himself. If he has something to sell—and all farmers have something to sell—a display at the county fair will help him put his farm before the public as a market for some particular product. It is an investment that will pay in months afterward.—The Farmer's Guide.

Do Not Buy Cheap Nitrogen!

THE need of studying the nitrogen problem will be evident to any farmer who will stop to think for a moment. Nitrogen is the most expensive element of plant food. When we buy it in chemical fertilizers we must pay eighteen cents a pound for nitrates, or the form which is available for plants. The demand for nitrogen has given it a regular value, and trade has fixed its price the same as for sugar, flour, lumber or other standard necessities. When a farmer is able to obtain nitrogen for less than this trade price he is that much ahead.

Some dairymen have learned that good alfalfa hay is nearly or quite equal in feeding value to wheat bran. They can raise a ton of hay much cheaper than they can buy a ton of bran, so that after a few years of substituting hay for the bran they find more than the difference in price in their pockets. In much the same way alfalfa, clover, cow peas, soy beans and similar crops obtain nitrogen for a farmer very much cheaper than he can buy it in chemicals. If those crops are fed to stock and the manure used on the ground, or if they are plowed under and left to decay in the soil, the result is much the same—an increase of nitrogen just as surely as if nitrogen was bought in a bag and scattered over the land.

The first business of a farmer, therefore, is to make all the nitrogen that he can at home. There may be small farms or gardens where several crops must be grown each season, so that land cannot be given to these manurial crops. In such cases it may pay to buy manure and chemicals. That is for the gardener to decide by figuring, but wherever there is land enough these nitrogen-gathering crops should be grown and used on the farm. But even if this be done there are some cases where it will pay to buy nitrogen in fertilizers. In such cases a farmer ought to know just what he is buying, or he will pay twice as much as the stuff is

worth. For instance, Professor Hopkins, of Illinois, states that fertilizers are being made by mixing acid phosphates, a small quantity of potash and finely ground dried peat out of a swamp! There are some rich samples of muck or peat which contain over three per cent of nitrogen when dried. This nitrogen is of very little value, since it is inert—that is, in such a combination that plants cannot use it. Farmers who have hauled many loads of swamp muck on their upland soil know how slow it is to give any return in crops. Unless it has been composted with lime you would hardly know where it was put. Now think of a farmer paying eighteen cents a pound for nitrogen in this muck when it is mixed with acid phosphate in a fertilizer! And yet that is evidently what thousands of them have done and are doing—to their loss.

The only remedy is for them to know what they are buying, and after finding how to make sure, to refuse to buy anything but the available forms of nitrogen. A horse jockey works off some broken-down old plug on the man who does not know what a good horse is. The farmer who has learned by observation and training how to know when lungs, legs or joints are sound will not be deceived, because he knows just what to demand. It is possible to know nearly as much about a fertilizer. We could name dozens of farmers who never would pay eighteen cents for five-cent nitrogen, because they have studied the fertilizer question, and know what an analysis means and what the guarantee stands for.

When we consider the millions of dollars spent each year for fertilizers we see how important it is to understand the question. It is not easy to understand at first, but we shall keep at it until we let the light in. We shall be helped by questions from readers. What we must have some day is a law compelling manufacturers to state just what their nitrogen comes from. Our chemists must learn how to detect the cheap forms, and our farmers must refuse to buy anything that is not available at once.—The Rural New-Yorker.

Do Not Pasture the Meadows

AS a general thing this should not be allowed. If the feed is insufficient in the pasture, and the yield of milk is decreasing in consequence, there is a great temptation to turn the cows upon a meadow where there is a good growth of grass. There may be a little present gain in this, but it will usually be more than offset in the reduction of next year's crop of hay.

Better by far make up for this in the production of such kinds of crops that can be fed to the cows and produce good results.

On some fields there may be a second crop of hay, but this should be cut early enough to allow of a sufficient growth of grass to afford a good protection to the sward during the winter.

Where two crops are cut, there should be a fall application of some kind of fertilizer, for the benefit of the land and future crops.—The American Cultivator.

School Studies

THE man who goes to college and takes an industrial course fits himself for work in the world. While he is getting mental training he is learning useful things. He may become fairly proficient in chemistry, or in electrical engineering, or in mining, or in agricultural science, while he is being trained to use his mind. But most boys go to no school higher than the common or high school. Why deny to them the chance of putting in their time on things that will be most useful to them?

It is not half so important to a farm boy to know about bank discount or the height of an Asian mountain as it is to know what constitutes a good soil. Why compel him to get his mental training in study of many things he can use to little advantage, and leave him in ignorance of trees and grasses and grains and animals? We do this because we have not awakened to the new industrial education. We follow rules made by men who know few useful things. Courses of study should be made by men who know the applications of science to every-day life. A new order of things is on the way. We shall bury the old. It would be done quickly if teachers were prepared for it.—Alva Agee in The National Stockman and Farmer.

Resoilng

THIS term, like many others, is not a particularly apt one—it doesn't really convey the proper impression. We have never liked it at all. As a matter of fact, resoilng is an absurdity. The earth has all the soil it ever had, and as a matter of fact has considerable more than it had a few eons back, for it has been deposited by the medium of falling leaves, wearing of rock and even the occasional sprinkling of so-called star dust which is the remains of meteors destroyed on coming in contact with the earth's atmosphere.

Earth invigoration or soil restitution by the return of the material to the soil of which it has been persistently and annually robbed for generations is what is really meant by resoilng. As a matter of scientific knowledge, soils once yielding splendid crops now absolutely barren, refusing to sustain plant life of any kind, still contain sufficient potash and phosphoric acid to do their share in supplying plant requisites for thousands of years to come. These barren plots do not lack the chemical constituents necessary for the growth of vegetation, but they do lack, in many cases absolutely, the decaying vegetable matter which is a prime requisite in more ways than one to the health of both ornamental and utility vegetable growth. Vegetable matter we know serves two purposes—it keeps the soil in good physical condition; it also, in decaying, liberates chemical necessities, or, better still, makes readily available these chemicals for absorption into the plant system through its feeder rootlets.

In the old days the fertility of the soil was kept up mainly by the waste of domestic animals. Every farm, and in fact every garden plot, was once kept up to at least a fair state of fertility, because the owners had, besides the very necessary horse, at least one cow and a number of pigs for home consumption, if nothing more, likewise a goodly flock of chickens. The household without this bunch of live stock was looked upon as poverty stricken indeed. The early farmer invariably had a flock of sheep beside, and each and every one of these animals not only paid well, but was an able assistant in agricultural manipulations.

All these items are well worth the most careful consideration, but the greatest value, hardly understood in the olden days, was in the waste products of animal life which aided most materially in returning to the soil much, at least, that had been taken from it in the crops that were gathered. Yet with all these aids the yearly loss of vegetable matter was great. This loss was made up in part by some farmers in every community by rotation of crops and the invariable planting of clovers or grasses, or both, in order, as they expressed it, to "rest the soil" and furnish pasturage or forage. When these "laid by" fields were turned under, even if the roots and stubble alone remained, their humus or vegetable matter was distributed in the soil, which in its decay gave invariably increased crops. Of late years the introduction of easily applied chemical fertilizers has badly side-tracked the majority of soil tillers, who do not understand that chemicals alone are not sufficient and that soil treated with even an inordinate and absurd amount of chemicals will rapidly run down and become sterile.—Long Island Agronomist.

The Hessian Fly

THE office of experiment stations of the Department of Agriculture states that no treatment is required for controlling the Hessian fly, providing the ground is deeply plowed and wheat planted at the proper time—late enough to escape fall injury to the crop. There is, however, danger from winter killing in this late planting.

Taking the location of Ohio as a basis, it is recommended that small areas of wheat be sown about the middle of September. If the fly is not observed by the time the plants are twelve days old, the main crop may be sown; otherwise it is desirable to wait a week longer. Dates based on latitude, however, are useless unless altitude is taken into consideration. According to observations made in West Virginia, a difference of two hundred feet in altitude is equal to one degree in latitude.—Guy E. Mitchell in The American Cultivator.

Gardening

Growing Peonies

A lady reader in Xenia, Ohio, proposes to plant a collection of peonies, but does not know when to transplant them and how to care for them. Undoubtedly the peony (popularly known as "piny") is one of ten or twelve of the most popular and best-known perennial flowers. It is so rugged and hardy that it succeeds almost everywhere and under all soil conditions, yet it likes and does its best in rich soil.

Early fall is a good time to take up and divide the roots. Each division should have one good eye. Where a specimen is to be planted, dig deep and work in plenty of good old manure or compost. Then set the root with the crown about two inches below the surface.

Peonies do well in a partial shade, and if once established, will continue to thrive and bloom for a long period, say twenty years or more, with little attention. Altogether it is a plant that should be found somewhere on every one's premises. There is a great number of varieties, suitable for groups and collections.

Tomato Varieties and Blight

A Michigan reader asks: "Is one variety of tomatoes more susceptible to blight than are others? Ours is an extra-early variety and is badly blighted. However, whenever we find a stray plant of another variety in the patch, it seems to be free from the disease."

In one sense our friend answers his own question. It is undoubtedly true that there is a great difference among tomato varieties, and likewise among potato varieties, in respect to their susceptibility to disease. The black rot or blossom rot of tomatoes, for instance, is often prevalent on one variety, while almost entirely absent on others close by.

Some potato varieties blight more readily than others. Extra-early sorts

usually have a weaker constitution than later ones, and therefore are more subject to disease attacks. In some cases the tendency to blight may be carried from one crop to a successive one by means of infected seed. We usually treat our seed potatoes for scab by immersing in a solution of formaldehyde or corrosive sublimate. Such treatment will also destroy any other infection that might be on the exterior of the seed tubers.

Not unlikely, washing our tomato and similar seeds in a disinfecting solution (copper carbonate, corrosive sublimate, etc.) might also be useful in warding off fungous diseases. Spraying with Bordeaux mixture in the early life of the plant will always be particularly advisable for early tomatoes and early potatoes.

Planting Onions in the Fall

I have just finished sowing my Silver-skin (or White Portugal) onion seed for making green bunch onions next May. I would have liked to try once more Beaulieu's Hardy Winter onion, which I found catalogued in one of the seed books issued by our leading seedsmen. I forgot what particular firm it was, and do not care to hunt through all the catalogues again. Mr. Beaulieu himself refuses to sell me seed, either because he has none to send out or because he does not like it that I tell the truth. He claims that Silver-skin is not hardy and will winter kill, and I always manage to carry it safely through the winter. That seems to make him angry. But I sow seed early in August, and do not believe that here at the North we can plant onion seed or sets in the fall with any hope of a satisfactory outcome. We plant our sets in early spring (for green onions). That is, most people around here do. I have green onions in plenty from my Welsh in April and early May, and from the Silver-skin, August sowing, after that.

Will onion seed saved from selected bulbs be as good the second year as ordinary seed the first year? That is the question asked by a reader. Usually black onion seed kept under ordinary circumstances will grow fairly well the second season, and if selected from fine bulbs, will most likely be better and do better than ordinary poor seed. But before depending on old seed, I would surely test it, to make sure that it will grow. This can easily be done and may save much useless labor.

Wireworms in Potatoes

A. S., a reader in Seattle, Washington, asks what treatment will prevent injury to potatoes by wireworms, which in his neighborhood, if ground is highly manured, are very destructive.

I know of only one method of fighting wireworms with some degree of success—that is, by plowing the land in late fall, in fact just before the final freeze up. This disturbs the wireworms, then existing in the pupæ state, and exposes them to frost, birds, etc., and will, if repeated every year, greatly reduce or clean out the pests.

Frequent applications to the land of salt, kainit, ashes, etc., have been recommended, but seem to have but little effect upon the number of wireworms. Plow, and do it as late as possible in the season.

Planting Asparagus and Rhubarb

I usually make my new plantings of asparagus and rhubarb in early spring. It can be done in the fall, however, and rather than not make any, I would advise going at it just as soon as you have an opportunity—that is, when you have the time to prepare the land and can get the plants. This is in answer to an inquiry by a reader in Michigan.

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Worms on Walnut Trees

E. H. M., Girard, Kansas—I do not know what worm you refer to that is eating the leaves of your walnut trees, and if you wish it identified I would have to have a specimen. All the species that eat the foliage require practically the same treatment. Perhaps the best of these treatments is arsenate of lead applied in a spray to the foliage. If this is not easily available, Paris green and water may be used to advantage, at the rate of about one pound of first-class Paris green to a hundred gallons of water. Occasionally Paris green has impurities in it that poisons the foliage, so it would be a good plan to experiment with this before trying it on your trees.

Planting Pine and Spruce Seed

O. J. H., Benson, Minnesota—Pine and spruce seed require special care, and without it they are very liable to fail in the loamy soils of western Minnesota. The seed should be sown under some protection, where they will get about half the sunlight and a play of sunlight and shade over the bed all day long. There is no need of soaking the seed before sowing.

It may be sown early or any time before the first of June. It is preferable to have a light soil and a rather airy situation. Sandy loam is better than clay loam. If necessary to use clay loam, the surface of the bed should be covered with about half an inch of sand after the seed is sown.

Birds and rodents are very fond of the seed, and frequently pull up the seedlings as soon as they push out of the ground. Where small quantities of seed are sown it will probably be necessary to protect the seed by covering with some kind of netting. The seed should be sown about one fourth of an inch deep, and then covered with half an inch of sand.

The Scotch pine in this country, while very hardy and holding on pretty well, and producing an abundance of cones, seldom has germinable seed, most of the seed being hollow and of no value for planting purposes.

Trees for Oklahoma

B. B. C., Hepler, Kansas—I do not know the best trees for you to plant in Oklahoma, but among the most desirable are the black and honey locust, both of which make good fence posts and fuel and are very ornamental. Black-locust seed can be bought from almost any of the large seed dealers, and is worth perhaps fifteen to twenty cents a pound in a small way.

I should think that where you live you could very likely find black-locust pods with seed in them hanging on the trees. These can be gathered and the seed saved for planting when you get to Oklahoma, as the seed will retain its vitality for many years.

Another tree for Oklahoma is the Osage orange, which is generally used as a hedge plant, but which makes very durable fence timber and valuable fuel. This is also grown from seed, which can be obtained as stated above for the locust. Catalpa speciosa is also a valuable tree for Kansas and Oklahoma.

Trees for Alkali Soils

A. D. L., Ames, Iowa—On alkali land trees of almost any kind fail to do as well as on good soil. The effects of the alkali will be seen in the yellowish appearance of the foliage and in a late growth in autumn, which often fails to ripen, and as a result the trees kill back or perhaps kill out altogether.

The best trees for growing on alkali soil in your state are the cottonwood and white willow. The manuring of such land with stable manure is generally very helpful and serves to counteract some of the effects of the soil alkali. When such land is drained, the alkali is gradually washed out, and this is a very desirable form of treatment.

Grass for Lawn

P. K., Pelter, South Dakota—By far the best grass I know of for a lawn in your section is what is known as Kentucky blue grass. I know it makes a hard turf, but in the dry climate of South Dakota the grasses like Rhode Island bent and the English rye grasses, which make the soft turf so favorably known to travelers in Europe, do not do well. I think you will find that a good lawn mixture is one made up of two bushels of blue grass, one pound of white clover and one pound of redtop.

Apple Trees Killed

C. C. P., Rice, Minnesota—I do not know what caused your one hundred apple trees to die, the first symptom being that the bark on the trunks turned black. I would like to know what varieties you planted and from whom you obtained them. It seems to me they must have been injured from what we know as fire blight, which is a disease which occurs in summer, generally about the middle of June. I think the varieties you planted must have been some of the more tender kinds, or else those that are especially susceptible to blight.

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Live Stock and Dairy

Sheep—Selecting the Best Adapted to the Farm

WE MUST learn, like the English flockmasters, to select the breed best adapted to our soil and climate. The hills and the low lands, the moors and the level lands in England each have a breed of sheep that is adapted to their place, and no attempt is made to adapt a single breed to all climates, conditions and soils.

The question of selecting the breed best adapted to the farm is of great importance to the man who is investing in a flock of sheep, and it will be my purpose to present a few thoughts regarding the various breeds of sheep and the kinds of soil, climate and conditions that are best adapted to their growth and development.

Each breed of sheep should be kept on the farm best adapted to its economical growth and development, for we must bear in mind that selection, feeding and environment have been the means of creating the good qualities in all breeds of sheep, and that we must continue the care of the sheep along the same lines that created merit in them if we would obtain the best results inherent in the breed.

The Merino

There is no breed of sheep that has experienced as many ups and downs as the Merino, yet in spite of all that has been said against them there is no question but that they occupy the very front place among the various breeds of sheep. They are eminently fine-wool producers and are well adapted to all farms where the production of wool is the leading feature of the sheep business.

The Merino sheep are the best breed for the man who is keeping a large flock, as they are excellent herders and will thrive better than any other breed when kept in large numbers. They are the most widely disseminated of any breed of sheep and will thrive wherever there is vegetation and wherever civilization finds a lodgment. They possess an inborn capacity for being developed into any type that a country may need, and this quality alone commends them to many sections where other breeds would fail. Their fleeces enter into fabrics for which there is no known substitute among textile fibers. In length of days of usefulness they are the antediluvians among sheep. They are the richest legacy that came down to us from ancient Rome, and well did the haughty Spaniard know the value of the Merino sheep and what it meant to a nation to monopolize the breed and the fabrics made from their fleeces.

Merino ewes when properly selected and mated with a Dorset ram are well adapted for the purpose of raising hothouse lambs, and any man who is capable of growing lambs that will weigh forty pounds at from sixty to seventy days of age can make large profits by crossing a flock of Merino ewes with a Dorset ram.

The Southdowns

The Southdowns are a handsome sheep and possess mutton quality to a degree that no other breed can excell. They are rather small and the wool does not grow evenly on all parts of the body, but with skilful breeding these faults may be reduced to a minimum. This breed was grown and developed among the sand hills of southern England, where good pasture was scarce, and their owners supplemented these pastures with root crops, which were grown on the lower and more fertile parts of their farms.

They would be best suited to the farmer who had a farm that was part hills and part level, low land where he could grow rich, succulent food to use as a supplement to the pastures.

Southdowns should not be fed too much fat-producing food, or they will be ruined for breeding purposes, but they will thrive on oats, oil cake and clover.

The Shropshires

This breed was bred and developed on rough, hilly land that afforded a fair quantity and quality of grass. In form they more closely resemble the Southdown than any other breed, although they are twenty per cent heavier in weight and their fleece is longer and heavier than that of the Southdown. They are adapted to a rough or rolling farm, where the owner will grow root crops and ensilage to feed in connection with a little grain and clover hay during the winter.

They are not a breed that requires pampering care, but they should have

good average care and liberal feeding. Their constitutions are strong and they can stand more rough usage than the Southdowns and a coarser diet. They are one of our most popular breeds at the present time, and no breed shows the skill of the modern breeder more than the Shropshires that are exhibited at all of our leading fairs and live-stock expositions. They are without doubt the best general-purpose sheep.

The Hampshire

The Hampshires possess a blacker face than the other breeds, also a larger bone, with a fleece differing but little from that of the Shropshire. Being coarser and larger, they require a more luxuriant pasture than the Southdown or the Shropshire, but when they are given a good, rich pasture and plenty of grain food they make an excellent sheep, and without it they grow up into ungainly shaped animals.

They are adapted to a farm where rich, luxuriant pasture and plenty of grain are grown to feed them when pasture is short. The lambs when fed grain from the time they will eat it until maturity make fine sheep and are hard to beat in the show ring. They were grown in the best part of England, where good feed was plenty and where rape, turnips and vetch and other foods of this character were raised and fed to the sheep. They must be fed the same liberal amounts of food and the same line of treatment must be pursued if they reach the development that they are capable of making on our farms.

The Oxfords

The Oxford breed originated from a cross between the Cotswold and Hampshires, and were grown and developed on the rich lands of England. As a breed they are not accustomed to poor care and mismanagement, nor will they thrive best when kept in large flocks. They require liberal feeding and rich, luxuriant pasture. They are adapted to the best farms, where they may be kept in small flocks and be fed a good ration of rich food during the whole year. The man with a poor farm will make a mistake if he selects Oxfords.

The Cheviot

This breed was developed up in the Cheviot hills between England and Scotland. They possess a good, strong, vigorous constitution and merit in a large degree. The man who has a rough, hilly farm with a fair amount of good grass will do well to select this breed of sheep.

There have been many fine specimens of this breed exhibited at the leading shows in this country during the past ten years, and the time is soon coming when this breed will be better appreciated than it is at the present time. There is no breed which has been improved more by American breeders than the Cheviots, and we have sheep of this breed that are superior to any that England can send over.

The Dorsets

The Dorsets are an old and celebrated English breed and are greatly prized for some highly valuable properties. Their wool is short and of a good fiber, and the mutton is of a medium quality. They are hardy, easily kept and possess a remarkable trait of bringing twins and triplets.

The peculiarity, however, which might render their introduction to this country highly desirable, consists in the circumstance of the ewes receiving the ram in May and June. The lambs being dropped in October and November are in killing condition during the festivities of Christmas and New-Year's and command exorbitant prices. They are a desirable breed, and the man who desires to raise sheep to sell to the men who make a specialty of growing hothouse lambs will find that he can sell all the Dorsets he can raise for an excellent price, for the demand for them for crossing with other breeds is greatly in excess of the supply.

They should be kept on a farm where the ewes will have liberal rations, for they cannot raise a good pair of twins unless they have plenty of food that is adapted to their needs while they are nursing them. They are valuable for cross breeding, and the rams will drive away an ordinary sheep-killing dog.

The Cotswolds

The Cotswolds are a large, thrifty sheep that originated in the Cotswolds of England, and they will be found best adapted to the farm that is rough and rolling, but possesses a fair amount of

good pasture. They are a good mutton breed and their wool is used largely for the coarser fabrics.

The Lincolns

This breed originated on the fertile plains of England. These sheep possess merit along certain lines, and for mutton lambs they rank second only to the Downs. They have a disposition to wander, and will crawl through a smaller hole than any other sheep of their size, although they will not jump over a low fence.

They are adapted only to fertile and rich farms, where they may have an abundance of rich food. They thrive best in small flocks. The man who has a poor pasture full of brush or berry bushes will not make a success with this breed. They will make good gains when allowed to glean in the grain fields, and for the man who has a farm in the rich farming section of the Middle West they stand unequalled as a profitable breed. They have a long, silken fleece that is easily made ragged by running in a brush pasture.

The Scotch Highland Sheep

For the man who owns a brush pasture, where the fertility has been ruined by poor management, and who desires to turn it to some use, the Scotch Highland sheep will just be the breed for him to select. They are not a profitable sheep for the man who owns a rich, fertile farm, for other breeds will pay better profits under similar conditions, but they are a tough, hardy breed that is capable of withstanding certain hardships and neglect that other breeds cannot stand, and will come the nearest to making something out of nothing of any of the modern breeds of sheep.

There are but few representatives of this breed in this country, but there is room for a large number in many sections of the East and South, where the land is in an unproductive state.

W. MILTON KELLY.

Starting Sheep Right for Winter

DURING the fall months I give my sheep the best feed possible, so they will go into winter quarters in good condition. I find that unless they start into the winter right they will not thrive in the latter part of it. In addition to fall pasture I feed some grain, and when turnips and pumpkins are ready, these are given, also. I keep my ewes in a thrifty condition, not fat, and feed them but little corn, as it induces fatness. I find that ewes well fed, but not so fed as to fatten, will give birth to a larger number of lambs.

According to my observation, a great many flocks do not get the amount of attention they should receive during the fall, and seldom get anything but pasture.

The necessity for starting the sheep into the winter in good condition is because during the winter there is quite a drain made upon them in two or three directions. One of these is the growing of wool, which continues to develop all through the winter. Another is the fact that the ewes are developing their young, and unless they have a great supply of substance to start with it will be found exceedingly difficult to keep them in good condition. A third drain is the loss of animal heat, which in turn causes the burning up of the fat on their bodies.

I never give my sheep any stale or undesirable feed, nor expect them to eat anything left over from a previous meal. I always make their rations as wholesome and tempting to the appetite as possible.

W. HANSON.

Breeding Young Sows

THE breeding of very young sows is much to be condemned from a practical standpoint. To the man who has had little experience it looks like an easy way to expand his operations at little cost and on short notice.

The young sow is materially stunted by an extra draft on her constitution at too early a time, and the extent to which young sows are sometimes "sucked down" is inexcusable, to say nothing of unprofitable.

From the standpoint of the litter, let it be observed that pigs raised from such sows are quite generally inferior in size and thrift, due to the lack of nourishment that the meager constitution of the dam could provide.

Ten or twelve months of age is a good time to breed young sows, at which time they should weigh two hundred pounds or more.

GEO. P. WILLIAMS.

Live Stock and Dairy

The Aeration of Milk

Rectifying Bad Flavors

ALTHOUGH at all times an important matter, this subject is of utmost importance to those interested in the treatment of milk in the fall season of the year. This is accounted for by reason of the fact that in fall and winter milk is commonly found to have what is known as a "feedy" flavor, this being attributed to certain foods being given to cattle during autumn and winter.

The term "aeration" as here applied means oxygenation of milk, or, more plainly, giving of air to milk, its object and result being in overpowering or dispelling whatever odor the milk may possess.

Each cow's milk has a peculiarity entirely its own, and although perhaps not perceptible to the average person, no two cows give milk exactly alike in flavor and aroma. This characteristic is called a "cowy" odor, and there is no method of altogether preventing this, however carefully the milking process be carried out. Now, this "cowy" smell is particularly noticeable in milk straight from the cow, and of course when still warm, the smell disappearing upon the milk getting cool, or at all events is then practically unnoticeable. While this is quite natural, there are other odors found which are both objectionable and unnatural, caused, as previously said, by the use of certain foods; the peculiar part of this is that the odor either appears while the milk is yet warm or after it has stood for some time. In the case of the latter the development is taking place during the time the milk is cooling down, and until perfectly cold nothing is noticeable. Of course, there are other causes of odors, such as bad air in the dairy, which would cause pollution of the milk. But this is a thing which can be avoided, as sanitation plays a part, and it would be an extremely careless man who allowed milk to stand in a place where the atmosphere was impure. And thus we can dismiss this as a case not likely to occur in a well-managed dairy. Milk—especially warm milk—having great powers of absorption, readily takes in surrounding gases, foul and otherwise, and the absolute necessity is seen of having a perfectly clean, well-ventilated place where there is plenty of light for keeping milk. The cow house, too, where the cows are milked during winter months, should be as clean as possible; the very second the milk leaves the udder of the cow it is liable to contamination by local bacteria.

Effect of Aeration

Therefore, when milk is found to be in such state, the odor and flavor is taken away by means of aeration. For a successful elimination the aeration must be conducted thoroughly, and if possible, and better still, scalding to one hundred and sixty degrees Fahrenheit, or pasteurizing should be introduced, followed by aeration and cooling. The keeping quality of milk depends upon the way in which it has been cooled, and those who are in the milk trade know the necessity of proper cooling. If the milk is not cooled down properly it is absolutely impossible for it to be sent any lengthy distance by rail, and milk is sent in many instances a long way to the nearest town. There is no need for an aerating machine, as by means of the refrigerator the two operations of cooling and aerating are performed almost equally as well; but it must be understood that to have a good result when working in this manner the milk must flow over the refrigerator steadily, being regulated so that there is an even flow throughout. Again, the milk should run slowly and in thin layers over the cooler, so that all of it comes in contact with the air, the oxygen of which is readily absorbed during the process. This should be done most carefully, especially during the season to which these notes chiefly have reference. In winter the preparation of milk for sale generally entails double work for the farmers, and if there happens to be a taint present, all his labor is lost. In winter there is no need for the refrigerator to be kept overflowing to the fullest extent with cold water, as often half or less of the summer quantity is sufficient, as the cold atmosphere plays its part, and the machine itself will be much colder than will be found the case in the warmer seasons of the year. It will effect the necessary cooling quite sufficiently.

Separating

When separating is done with milk drawn straight from the cow it is of course warm, and this is the time when the "feedy" flavor is pronounced, and people

who usually work the milk when still warm will know its chief faults. Where there is a feedy flavor, and in consequence it is found necessary, we recommend that the cream be put over the refrigerator as previously described and allowed to be thoroughly aerated, and preferably the cream should be scalded, say at about one hundred and fifty degrees Fahrenheit, before the cooling and aerating operations. If the cream be frequently stirred during ripening it will greatly assist to keep the undesirable odors from appearing, and at the same time the cream beneath the surface will be brought into contact with air; thus stirring assists aeration.

Creaming by shallow pans still exists in some places, and those who adopt this method should thoroughly air the milk by stirring or passing from one pan to another, repeating from time to time, before setting in the pans. A very good idea is the old-fashioned one used by many people even to-day; it consists of an old tin pail—preferably a light one. Bore holes in it, say about thirty or forty, at the bottom of the can. Now fix this up in an elevated position—it may be attached to a pole fixed in the wall—and place a large pan underneath. The cream is now poured into the perforated vessel, and runs through the small holes into the pan beneath. This continued a few times will give satisfactory result.

Important to Cheese Makers

The subject of aeration is also an important one to cheese makers, as in their case it performs a twofold operation, preventing, as it does, the cream rising to the surface during the process of converting the milk into cheese. The loss is consequently minimized, as in all cases there is a loss which occurs in the early stages of cheese making.

Lastly, it is of the utmost importance that the operation of cooling and aerating must take place in a suitable place; the room must be well lighted, clean, and above all, well ventilated. The cooling room or house should never be in close proximity to such places as cow sheds, etc., as the impure air of such places is carried around, and would gain entrance to the cooling place. What might be thought minor details such as these are really of the greatest importance, and for the successful aeration and elimination of existing gases, which, as previously said, are frequently found in milk, the instructions must be closely followed out.

W. R. GILBERT.

Feeding Lambs for Market

THE more quickly any animal is fed to that point where it is ready to be placed on the market, the wider will be the margin for profit. This is especially true in feeding spring lambs for the earliest market possible.

The first thing necessary is to have dry pens and a dry place in which to spend the night. Soon the fall rains will begin, and the lamb suffers a great deal from cold if it is compelled to remain out in the open, with a wet coat, during the cold nights. Then, too, if the quarters are wet and muddy all the time there is great danger of foot rot. When the sheds are covered with straw, to keep from getting muddy, this bed should be changed as often as necessary to keep everything underfoot perfectly dry. The shed under which they shelter should not leak. September and October nights are always cool, no matter how warm it is throughout the day, and if the shed leaks during a night rain, the lambs will become chilled and cold. A half-frozen lamb can never make a profitable gain, no matter what kind of a ration is fed.

As to a ration, many different kinds may be given, and all have shown satisfactory results. For the first few weeks a ration made up of equal parts of ground corn, wheat bran and oats is an ideal feed. As the lamb becomes older the amount of corn should be increased without decreasing the amount of oats and bran, until it is receiving as much ground corn as it is getting of both oats and bran.

In addition to this, the little animals should have the run of a convenient pasture. Exercise is one of the necessary things in the maintenance of good health, and good health is one of the very important essentials in the production of young mutton. W. M. H. UNDERWOOD.



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Poultry Raising

The Cause of Many Diseases

MANY of the ailments of poultry, such as cholera, bowel troubles, etc., are caused by stagnant water. It is not wise to have many vessels in the poultry yard, which are apt to catch and hold rain water, or if such are there, they should be emptied within a short time after the rain.

Rain water gets stagnant much quicker than well water. Especially is this true in the fall of the year, when the leaves from the trees drop in it and decay there. Such water is very unhealthful for poultry.

The general supply of water should also be kept as clean as possible. No sediments should be allowed to collect in the bottom of the water trough. As the health of the poultry depends largely upon the condition of the water they get, this is one of the cares that should not be neglected.

GREGOR H. GLITZKE.

September Poultry Wisdom

THIS month is none too soon to begin to prepare for winter. Go over the poultry house thoroughly, inside and out. Examine the roof, put it in proper condition, and give the interior of the house a good coat of whitewash. If an ounce of carbolic acid is placed in each pail of wash you will not be likely to be troubled with vermin.

The poultry house should be on dry, well-drained land, but if it isn't, grade up around it at once, so that no water will stand near it even after the heaviest rain.

In cleaning the poultry house, be sure to clean out all the nests and thoroughly spray them before putting in new nesting material.

If a new house is needed, it should be started at once, that it may be thoroughly dry before the poultry are put into it.

The best floor for the poultry house is cement, for it is dry, and rats cannot get through it. It must always be kept well littered, though, so that it may not be too cold in winter. Of course, the hens may scratch in this litter, but it is best to have an open scratching shed attached for them in winter. They should also have some exercise in the fresh air each day.

It is a good plan now to make a place ready for storing a lot of leaves for winter use.

Have the roosts low. The air may be warmer near the roof, but it is also likely to be impure. Then, with low roosts lameness may be prevented, for it is largely caused by jumping from high roosts.

Be sure that the poultry house is supplied with a dust bath. See, too, that it is kept in good condition. If it is not replenished occasionally it is likely to cake, and so be useless.

Do not fail to supply plenty of gravel, shell and bone. The poultry are always on the lookout for sharp substances, and they know exactly what they need.

Do not put the poultry into winter quarters too early or house them too closely at first. Do not crowd at any time, and have the house well ventilated. Do not be afraid of fresh air; but this must be arranged for without drafts. Dampness and drafts always make trouble.

The molting season is now at its height. The best of care is now needed, for if there is any weakness in a fowl, it is sure to show itself during the trying ordeal of shedding the old and taking on the new feathers.

See that the food is nutritious. Feed little, if any, corn. If the fowls can have a grass range they will gather much of the needed food. Such greens as carrot tops, cabbage, hay and white clover are good for fowls confined in runs, and rusty iron placed in the drinking vessels will furnish a good tonic. Take courage, for heavy molting means more eggs this winter.

This is the month, too, to begin advertising surplus stock.

If new blood is needed, do not delay the purchase beyond September.

It is a good idea to caponize this month. Also set hens or start the incubator for Christmas poultry.

If the male birds have not been removed from the flock, they should be at once, and the cockerels should also be separated from the pullets.

The duck season will soon be over, so if any ducks remain aside from those intended for next season's breeding, market at once. They can be easily disposed of to people just returned from their summer outing and to the near-by hotels, and at a good price.

M. LEILA DAWSON.

Poultry in Agricultural Shows

THE object of the poultry section at agricultural shows is twofold—first, to encourage farmers in the district to breed better-quality and more pure-bred poultry, and secondly, to increase the gate money. Now, this latter is a very important point, for every agricultural and horticultural society is largely dependent upon the money taken at the gate, and without doubt the poultry section will always increase the gate money.

Entries in this show should be limited to a radius, because the man we wish to shut out from our poultry sections at agricultural shows is the man who goes all over the country with a team of prize birds. This man is no good to the farmer, except that he shows ideal specimens of each breed; but these have no pretense to utility points.

We can have our poultry section open to a ten, twenty or thirty mile radius; or to extend it further, it can be limited to exhibitors living in the district where the show is held. Another method is to limit the price on each exhibit; but this plan is not advisable, as exhibitors only buy back their birds again, should any one claim them. Thus we find the most satisfactory method is to have our poultry section confined to a radius; then we shall get more genuine farmers showing poultry.

Classification as a rule causes the most heated debate in the drawing up of a schedule for the poultry section, simply because the majority of a general committee know nothing about poultry. Yet each one thinks that he should have his word and opinion about it. Much better to have a subcommittee composed of practical men who understand poultry and poultry shows to draw up the schedule of the poultry section. Really one is struck, when looking at the poultry-section classes, to find the antiquated way in which they are drawn up. The great point should be to include popular and new breeds, and, above all, give classes to the breeds that are most suitable for utility, so that the farmer in the district may form a good idea of the most suitable breed to keep on his farm with a view to general utility, and not for exhibition alone. Utility poultry all along must claim our first attention, as what we want is more egg production by the farmer. Therefore have plenty of classes for egg and table poultry. An extra attraction in these classes, and an instructive method, also, is to have small labels written and placed on both the egg and table birds, stating from what breed or crosses each is produced; then people attending the show may form an opinion of the merits of each breed or cross. Certainly the poultry section should be made instructive, as well as pleasing to the eye.

Prize money and entry fees are points upon which opinions differ greatly, and the great mistake in the past has been to make the first prizes too valuable. Special prizes can very well be left out altogether, as they often prove a great source of trouble to the secretary. First prizes too frequently go to the same exhibitors show after show, season after season, and therefore we must, if possible, adopt some method to prevent too much of this sort of thing taking place in our poultry sections.

Judges must be selected with the greatest possible care. This is the most critical point in arranging for poultry exhibits at agricultural shows. First of all we want a really practical man—a man who knows his work, and a man who has an opinion of his own, who will not be influenced either one way or another by either exhibitor or steward. Of course, opinions differ and two judges may have two different opinions. This accounts for poultry winning first under one judge and only very highly commended under another.

Another point which must not be overlooked is that neither the secretary nor the stewards at any show should be allowed to exhibit. This in the past has been much discussed, but certainly most exhibitors are opposed to show officials being exhibitors at their own show. Another important point is that no exhibitor in the poultry section of an agricultural show should be allowed to pen his own birds.

Lastly, the prize money due to exhibitors should be paid in full as soon as possible after the show. This is a most important item, and one that secretaries must bear in mind. I hope that the above brief notes by one who for many years has been a keen observer of these sections may prove useful during the coming season.

W. R. GILBERT.

Farm Notes

Killing Persimmons

AS PERSIMMONS are very common here in Missouri, I have had a good deal of experience in getting rid of them. The best plan I have found yet is to cut them off underground in July or August, and then with a sharp mattock or hoe keep all shoots cut back below the surface. Two seasons of this treatment will generally finish them, though sometimes a very persistent root will hold out a little longer.

I am trying this season for the first time a plan that is said to be very effective in getting rid of them. In the latter part of summer strip the bark from the stem for a foot or more from the ground up; then with a gritty rag wipe all sap or moisture from the exposed stem. It is said that by this method the bush will be killed, root and all, by the next spring. I do not know how correct this is, but I am trying it on persimmon and other troublesome bushes.

COURT W. RANSLOW.

Device for Saving Seed Corn

IN LOOKING over the improvements sent in by your readers, I find a device for saving seed corn. I have a device which is less expensive and a great deal better.

Take a scratch awl or anything else that you can use to make a little hole in the butt of the ear, then push in the little barbed hook shown in the illustration.



Seed-Corn Holder

tion. Hang it over a wire that you can string up in the top of your barn, and you will have it where rats and mice cannot get at it.

Common hay wire is as good as anything with which to make the hooks. They can be saved by taking a hammer or mallet and mashing the butt of the cob after the corn is shelled off.

I. V. A.

Prevent Sweet Potatoes from Rotting

AFTER the potatoes get their growth, cut the vines off just under the ground. Leave the potatoes in the ground for two or three weeks, or until there is danger from freezing. This allows them to ripen while in the ground.

After digging, allow them to dry well, and then place them in some cool, dry place until ready to store them away in boxes or barrels for the winter.

J. H. LEASOR.

Moles on Irrigated Land

MOLES are a great pest on irrigated land, and the simplest and best method for getting rid of them that I have been able to find is the following:

Take concentrated lye, such as you can get at any grocery store, dig open their runs, put about one fourth of a tablespoonful of lye in a place, and press the dirt down over the lye.

The mole in digging out his run will get the lye on his feet; then he will begin to lick his feet, and that will be the end of the mole.

L. L. LYDELL.

Agricultural News-Notes

There is a three-hundred-and-fifty-acre sweet-pea farm near Redondo, Los Angeles County, California.

There are in the United States no less than twenty-five kinds of nut-bearing trees that are also valuable for timber.

California is said to have the largest English-walnut orchard in the United States. It consists of nearly one thousand acres.

Florida now supplies about two thirds of the world's output of phosphate rock. In 1907 it amounted to over two and one fourth tons.

It is reported that machines propelled like automobiles are being made for use in Texas that will rake up the pecans, fan out the trash, husk and sack the nuts.

Paying results can best be secured by judicious co-operation on the part of the small-farm owners who reside near good markets. The raising of grain should give way to fruit and vegetable growing.

During the past twenty years the production of wheat in California has been

decreased about one fourth, and there has been a corresponding increase in the production of fruits and better-paying crops.

About twelve hundred carloads of fruit were shipped from the Yakima section of eastern Washington in 1907 to the great Eastern markets. It is estimated that the 1908 crop will be double that of last year.

Hon. Geo. W. Keiner, Commissioner of Agriculture and Immigration, is about to send a fine exhibit of Virginia-grown farm products to Scotland with a view of inducing Scotch farmers to settle in that state.

Probably the largest tobacco farm in the world is located in Decatur County, Georgia. It contains twenty-five thousand acres, and about thirty-five hundred persons are employed in the culture of the leaf and in preparing it for market.

A notable feature of the National Corn Exposition to be held in Omaha, December 9th to 19th, is to be the Alfalfa Palace. The exterior will be made of bales of alfalfa, and the interior will be filled with specimens of the various clovers and grasses.

Late reports from Europe indicate that although the grain crop will be an average one, yet a liberal supply will have to be obtained from the United States and Canada, and that relatively high prices before the end of the year may reasonably be expected.

The twin industries of dairying and bacon production in Denmark have made remarkable growth. In 1888 there was but one bacon factory, whereas in 1906 thirty-three co-operative ones had been established, and the annual output was valued at \$17,500,000.

Camphor culture in Polk County, Florida, is likely to prove profitable. Five miles east of Bartow seven hundred acres have been planted with two hundred thousand camphor trees. The camphor is produced by distillation from the leaves and small branches of the tree.

It is well that the attention of Congress and the governors of the states has been called to the enormous waste of our natural resources that has taken place during the past twenty-five years. This must be checked at once or even the ruin of our agricultural resources will be the inevitable result.

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Betterment of Farm Life in Our Nation

PRESIDENT ROOSEVELT has appointed a commission to report to him on the social, sanitary and economic conditions of American farm life, and to recommend to him any improvements that may be made in existing conditions.

The men the President has chosen to act on this commission are Prof. L. H. Bailey, dean of the Cornell College of Agriculture; Henry Wallace, editor of "Wallaces' Farmer;" President Kenyon L. Butterworth of the Massachusetts Agricultural College; Gifford Pinchot, the United States Forester, and Walter H. Page, editor of "The World's Work."

* * *

"When tillage begins, other arts follow. The farmers, therefore, are the founders of human civilization."

* * *

President Roosevelt gives his approbation to the popular opinion that the welfare of the nation is dependent on the welfare of the farmer in his letter to Professor Bailey asking him to accept the chairmanship of the commission where he says:

"No nation has ever achieved permanent greatness unless this greatness was based on the well being of the great farmer class, the men who live on the soil, for it is upon their welfare, material and moral, that the welfare of the rest of the nation ultimately rests."

* * *

That the President is aware of the fact that the farming population as a whole has not kept abreast with the nation in its development socially and economically, and that it is his intention to investigate the reasons for this and to use any legitimate means in making country life more pleasurable and more profitable, is evidenced in this same letter to Professor Bailey, as follows:

* * *

"In the United States, disregarding certain sections and taking the nation as a whole, I believe it to be true that the farmers in general are better off to-day than they ever were before. We Americans are making great progress in the development of our agricultural resources. But it is equally true that the social and economic institutions of the open country are not keeping pace with the development of the nation as a whole.

"The farmer is, as a rule, better off than his forebears; but his increase in well being has not kept pace with that of the country as a whole. While the condition of the farmers in some of our best farming regions leaves little to be desired, we are far from having reached so high a level in all parts of the country. In portions of the South, for example, where the Department of Agriculture, through the farmers' co-operative demonstration work of Doctor Knapp, is directly instructing more than thirty thousand farmers in better methods of farming, there is nevertheless much unnecessary suffering and a needless loss of efficiency on the farm.

* * *

"A physician, who is also a careful student of farm life in the South, writing to me recently about the enormous percentage of preventable deaths of children due to the unsanitary condition of certain Southern farms, said:

"Personally, from the health point of view, I would rather see my own daughter, nine years old, at work in a cotton mill than have her live as tenant on the average Southern tenant one-horse farm. This apparently extreme statement is based upon actual life among both classes of people."

"I doubt if any other nation can bear comparison with our own in the amount of attention given by the government, both federal and state, to agricultural matters. But practically the whole of this effort hitherto has been directed toward increasing the production of crops. Our attention has been concentrated almost exclusively on getting better farming.

"In the beginning this was unquestionably the right thing to do. The farmer must first of all grow good crops in order to support himself and his family. But when this has been secured the effort for better farming should cease to stand alone and should be accompanied by the effort for better business and better living on the farm. It is at least as important that the farmer should get the largest possible return in money, comfort and social advantages from the crops he grows, as that he should get the largest possible return in crops from the land he farms. Agriculture is not the whole of country life. The great rural interests are human interests, and good crops are of little value to the farmer unless they open the door to a good kind of life on the farm. This problem of country life is in the truest sense a national problem. In an address delivered at the sesquicentennial of the founding of agricultural colleges in the United States a year ago last May I said:

* * *

"There is only one person whose welfare is as vital to the welfare of the whole country as is that of the wage worker who does manual labor, and that is the tiller of the soil—the farmer. If there is one lesson taught by history, it is that the permanent greatness of any state must ultimately depend more upon the character of its country population than upon anything else. No growth of wealth, no growth of cities, can make up for a loss in either the number or the character of the farming population.

"The farm grows the raw material for the food and clothing of all our citizens; it supports directly almost half of them, and nearly half the children of the United States are born and brought up on farms. How can the life of the farm family be made less solitary, fuller of opportunity, freer from drudgery, more comfortable, happier and more attractive? Such a result is most earnestly to be desired. How can life on the farm be kept on the highest level, and where it is not already on that level, be so improved, dignified and brightened as to awaken and keep alive the pride and loyalty of the farmer's boys and girls, of the farmer's wife and of the farmer himself? How can a compelling desire to live on the farm be aroused in the children that are born on the farm? All these questions are of vital importance, not only to the farmer, but to the whole nation.

"We hope ultimately to double the average yield of wheat and corn to the acre; it will be a great achievement, but it is even more important to double the desirability, comfort and standing of the farmer's life."

* * *

"It is especially important that whatever will serve to prepare country children for life on the farm, and whatever will brighten home life in the country and make it richer and more attractive for the mothers, wives and daughters of farmers, should be done promptly, thoroughly and gladly. There is no more important person, measured in influence upon the life of the nation, than the farmer's wife, no more important home than the country home, and it is of national importance to do the best we can for both.

"The farmers hitherto have had less than their full share of public attention along the lines of business and social life. There is too much belief among all our people that the prizes of life lie away from the farm. I am, therefore, anxious to bring before the people of the United States the question of securing better business and better living on the farm, whether by co-operation between farmers for buying, selling and borrowing; by promoting social advantages and opportunities in the country, or by any other legitimate means that will help to make country life more gainful, more attractive and fuller of opportunities, pleasures and rewards for the men, women and children of the farms.

"My immediate purpose in appointing this commission is to secure from it such information and advice as will enable me to make recommendations to Congress upon this extremely important matter. I shall be glad if the commission will report to me upon the present condition of country life, upon what means are now available for supplying the deficiencies which exist, and upon the best methods of organized, permanent effort in investigation and actual work along the lines I have indicated.

"You will doubtless also find it necessary to suggest means for bringing about the better adaptation of rural schools to the training of children for life on the farm. The national and state agricultural departments ultimately must join with the various farmers' and agricultural organizations in the effort to secure greater efficiency and attractiveness in country life."

* * *

We shall look forward to the report of this commission with keenest interest, for the President says that with the single exception of the conservation of our natural resources which underlies the problem of rural life, there is no material question of greater importance now before the American people.

* * *

Hon. Gifford Pinchot said to a New York "Tribune" correspondent concerning this letter of the President's:

"In my opinion this new policy deserves to be ranked among the greatest of President Roosevelt's administration. The 'square deal' and the conservation of our natural resources alone should overshadow it from the viewpoint of national importance. It is too big a question to be readily appreciated, but the results of this letter will be so far-reaching that within a short time the entire country will realize the full scope and meaning of the improved conditions hoped for by the President."

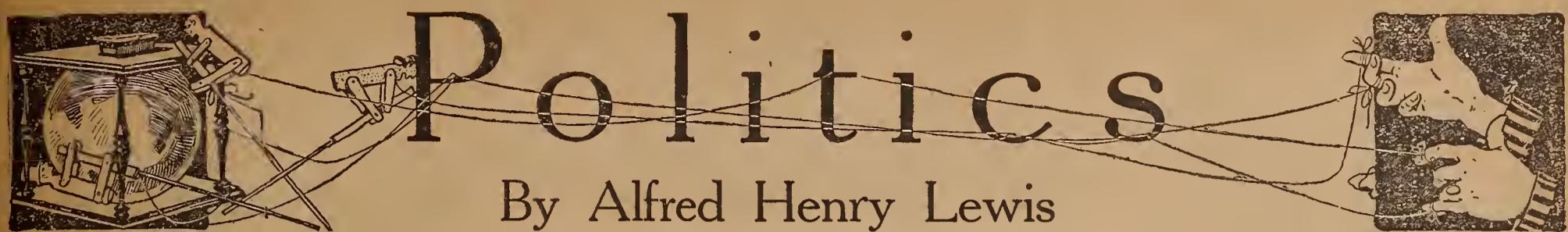
From Our Point of View

The interest which the Bowery Mission of New York City has taken in the farm-labor question is worthy of commendation. A free labor bureau is maintained, and in the last few months more than a thousand laborers have been sent to the country districts in answer to appeals from the farmers.

In general farming no better use can be made of straw than for the bedding of live stock. A heavy bedding of straw each day will keep the animals clean and absorb a large proportion of the liquid manure, which when applied to the land gives ample return in the succeeding crops to pay for the little extra labor.

Probably the greatest grain exhibit ever made in any part of the world will be shown in Omaha, Nebraska, from December 9th to 19th inclusive, under the name of the National Corn Exposition. The value of the awards to be given to the winners of prizes exceeds twenty-five thousand dollars. The largest premiums offered are the sweepstakes prizes for the best wheat, corn and oats. The state winning any one of these prizes will reap untold benefit in the advertising its agricultural possibilities will thus receive.

It is often thought that if a man is good for nothing else he should go to farming. In some cases this may be true; some men are not adapted to other lines of work, but it must not be construed to mean that just any one can make a success at farming. The successful farmer, above all others, must be a man in every sense of the word. He must be capable of deciding very important questions on short notice. In no other business are one's plans subject to such sudden and unexpected changes, and success depends on quickly substituting some other course of action. The successful farmer, too, must be a man who can analyze local conditions and so adapt himself and his operations as to be in harmony with them.



Politics

By Alfred Henry Lewis

PRESIDENT ROOSEVELT's recent announcement that he meditates uplifting the moral, mental, social, not to say domestic, average of the American farmer presents a subject that might with advantage bear a discussion word or two. As a chief magistrate I have rejoiced in Mr. Roosevelt. I in no wise regret my puny share in bringing about his White House elevation. I must say, however—and I say it in deference and respect—that in this sudden business of improving the farmer he is barking at a knot.

The last time our Uncle Samuel counted noses was in 1900. That federal roll call put the workers or wage earners of the country at 29,285,922. Of these about 450,000 were women and children, most of whom would have been better off at home.

Ladies, frown not! I intend no harm. But can't you see, with your deep, strong, lucid intelligence, that to multiply the workers doesn't multiply the work? To swell the ranks of labor by a conscription of women and children is good for the employer. But is it—in the long run, the family run, the communal run—good for the women and children? However, I will not enlarge upon the question; I took it up only in a way of apology and to save myself from feminine wrath. Returning, then, to that count of 29,285,922 workers in the nation at large: More than one third, or 10,438,219, are farmers. It is these whom our earnest chief magistrate appears to suspect of an unfortunate barbarism, and whose uplift he is so vigorously resolved upon.

As a President Mr. Roosevelt is admirable. He fights the right people, punishes the right criminals, heads events in the right direction. But he ought to stop there. He should realize that even a great President has his limitations. He is doubtless a many-sided man; but it must have been his blind side that was turned toward the farmer. His proposal shows that he is as ignorant touching the farmer and his home surroundings, together with his moral-mental life, as of the sewage system of Timbuctu.

Now I know something of the farmer; something of Mr. Roosevelt. And I can assure Mr. Roosevelt that his anxieties are misplaced. The farmers—meaning a huge majority—read, think, talk, act, live as nobly high as does he himself. There exists no more justification for his excitement over them than there would for a similar excitement on their parts over him.

The affair has left a bad taste in my mouth. It was so distinctly English in its attitude, so patronizing in its inference, that I—who hate both patrons and English—have allowed myself to be disturbed. I begin to see what Emerson meant when, speaking of Thoreau to an inquiring caller, he said: "We love Henry, but we don't like him." Mean well? Of course he means well. Also, you could say as much of a wet dog.

There are people—and Mr. Roosevelt should guard against becoming of that unguided brotherhood—who, when they bow to you, back a vase off the table; who, when they put on their overcoats in the hall, tip over all the palms; who, in getting a book, pull down a shelf full; who sit on tables to eat off chairs; who, in short, put in existence turned around in their stalls, and with tails in the manger stand shouting for hay.

It is these folk, commonly, while blind to the beam in their own eye, who are forever seeing the mote in the eye of the man next door, and who insist upon it as their duty to collar him and carry him off to an oculist.

There are things which Mr. Roosevelt might do for the farmers, but the theater of his benevolent exertions would not be inside their homes or their hearts or their heads. Take the tariff: If Mr. Roosevelt would but bend his energies to the improvement of the tariff, which now adds to the price of what the farmer buys without adding to the price of what he sells, and bring about a revision that should mean a "square deal," there be farm millions ready to canonize him and call him blessed. In his present enthusiastic crusade, however, for the advancement of farm conditions already advanced, and the moral-mental-educational-social betterment of those who have been leading the national grand march since ever we had a flag, he but "utters vain knowledge and fills his belly with the east wind."

* * *

Perhaps as easy a method as any other, to do my ink duty at this pinch, would be to reply to a handful of the more important letters that of late have come roaming my way. Yesterday I wrote to a young gen-

If you don't agree with Mr. Lewis, "talk back" to him, confining your reply to two hundred words. We shall hope to publish some of these replies from time to time.—THE EDITOR.

tleman who had appealed to me for advice. He lives on a farm near Madison, Indiana, and this home fact in his case has suggested to me that perhaps there be others similarly surrounded who are possessed of a similar curiosity.

The subject upon which he came seeking light was literature and how to produce it. Not caring to disclose my own blinded condition, I boldly declared that literature was no more nor less than so much bricklaying with words. Certain graceful, fortunate folk builded cathedrals, palaces; others more humbly gifted builded stables, switch shanties; still others—like the fellows who write for the encyclopedias—builded cold-storage structures wherein the dead facts were put away on ice. Also, I set forth how there are but three ways wherein one might hope for literary victory. One must either write old things in a new way, or new things in an old way, or new things in a new way. Particularly one must not write old things in an old way. To do so is to strive to make a fire with ashes.

Since I mailed the inquiring one his letter, I've thought of another demand of the writer's art. The writer's inclination should be as thoroughly trained as a hunting hawk. His inclination should be taught to perch on the wrist of his employment, ready to fly at heron or partridge or duck at the behest of the managing editor. At a word, he should be able to unhood it and cast it off, falcon wise, at whatever topic matched those columns it had become his task to fill. And then, with call and lure, he should be equally able to bring it again to wrist. I often wonder how it would feel were one to write on what topic best dovetailed with one's fancy! And yet there lives the shrewd chance that nobody, save the printer and the gentleman of the proof sheets, would read one's production. Doubtless it is best to have a managing editor to lead one to the end of a row of facts, as though it were a row of corn, and stuffing a pencil in one's fist, cry "Hoe!"

Likewise, you who would write should resolutely write what is in your own mental and sentimental stomach, not what is in some other man's stomach. And write it also in your own way, not in some other man's way. Take your subjects from another as much as you please; but for views, for integrity, for style, go to no one save yourself. If every one had the stark egotism and heart courage to follow my counsel in this, we should have eight millions of writers in this country, and the worst of them would be the equal of Thackeray.

* * *

There comes a gentleman, signing himself facetiously "a hayseed working for wages," who is curious concerning the Department of Labor and Commerce—that ninth instrument lately added to the Cabinet fife and drum corps of the administration. Concerning that arm of government, its scope and sweep, I shall let Mr. Strauss, its present head, tell the story himself. Speaking to the question, put not many moons ago, he said:

"The Department has direct supervision over the great corporate enterprises of this country. It can inquire into their secrets, examine their books, expose the evils they practise. Its authority is unlimited, unquestioned. Yet it is not resigned for destructive purposes. It does not seek to overthrow or tear down structures of trade and commerce, except in so far as they are violating the law and are themselves destroyers of equal opportunity. Rather its mission is constructive, helping to build up more and greater business, on the basis of equality of opportunity and observance of the law by all alike."

"Publicity is the great deterrent of violations of law by corporations. In the primary stages it is the most powerful weapon possessed by the department. I think it will be found in the future that seventy-five per cent of the violations will be corrected this side of the attorney-general's office. The mere fact that this department possesses power to investigate, and the knowledge among corporations that exposure through publicity is certain, have served to change violators of the law into observers of the law, without

the necessity of prosecution. The spirit of voluntary correction is prevailing in many places.

"The one thing I am determined upon is that the door of equal opportunity shall be opened to all. It is not within the power of government to equalize competitors. Government cannot confer the same degree of ability on all men; but it can make equal opportunities for all, so that each may enter the race upon his own merit, without the handicap of unfair discrimination and illegal privilege. And furthermore, not only do I believe in the removal of disadvantages, but I want the advantages, if there be any, passed around to all alike.

"It is not the existence of combinations of power, but the misuse of that power, that should be regulated. Our determination is to enforce the laws which guarantee to all interests and to all individuals their rights and privileges, and to protect them from unjust encroachment on the part of other interests or individuals."

* * *

To Wm. Jones, Esq., of Missouri: The Standard Oil Trust—the first of its venomous litter—was formed in 1882. Thirty-nine oil companies, rivals, came together in partnership, just as might thirty-nine men, and the combination was called "Standard Oil." It was Mr. Rockefeller who did it, and he had the battle of his life. It was in the heat of that conflict he burned up his hair and his stomach. The best he has been able to do since is wear wigs and drink mare's milk. What does it profit a man though he should gain the whole world and wear wigs and drink mare's milk?

Standard Oil's first act was to stamp out opposition. It fought and killed individual oil companies, as big countries wage war of conquest upon little countries. Standard Oil slew and spared not. Little by little, opposition—which is competition—was beaten down. The war filled prisons, lunatic asylums, graveyards, almshouses; but what cared Standard Oil? It filled its pockets—which was the great thing.

Five years later, in 1887, a group of sugar companies, sixteen, dazzled by the splendid example of Standard Oil, copied its methods and created the Sugar Trust. It pursued those same iron-heeled tactics invented by Standard Oil, with the same poorhouse-prison-graveyard-asylum-bank-balance results, and was therefore happily successful. Meanwhile the Rockefellers and the Havemeyers were pointed out to Sunday-school children as headlands on the coasts of existence by which to steer.

These first Trusts were not without their vicissitudes. The attorney-general of Ohio filed a complaint against Standard Oil, and asked that its charter be revoked; which was as though, in the case of an individual, the attorney-general had asked that he be hanged. The attorney-general of New York adopted a similar course against the Sugar Trust. In both Ohio and New York the Trusts were defeated, and ordered to disband. The courts held that a huddle of corporations, unlike a huddle of individuals, could not make of themselves a copartnership.

Had the law rested there, on the courts' decision, there would have been no Trusts. But it didn't rest there. Under manipulation, the legislatures of Ohio and New York passed statutes "enabling corporations" to come together as partnerships. Since then other states have done likewise, and a multitude of Trusts have sprung up, the harvest of what dragons' teeth were thus sown by venal or foolish legislators.

To-day—unless Blackstone is a fool—if every state would repeal that empowering statute, which clothes the corporations with strength to bind themselves together as Trusts, we would go back to the law as declared by the Ohio and the New York courts in the cases of Sugar and Standard Oil. Also, there is about as much chance of such repealing legislation as of finding a Bible in a barroom.

It is certain that the criminal Trusts can be coped with and conquered. There is law enough—a remedy for every wrong. The need is for officials who will do their duty, their courageous duty under the law. Some rich Trust rogues should go to prison. Thereupon, other rich Trust rogues would lead better, if not happier, lives. Somewhere between the pulpit and the prosecuting attorney lies the way. The pulpit should thunder, the prosecutor indict. The one should lift up the work where the other laid it down. When you can't preach it into these malefactors, you should punish it into them, and humbly trust the penitentiary to take the place of saving grace.



An Artistic Cure

By L. Ten Broeck



EZRA CALDERHEAD was a self-made man—there could be no doubt of that. Out of the raw material of health, vigor, determination and common sense he had slowly and painfully reared himself into an imposing figure—a millionaire many times over, the ruler and disposer of a vast industry.

A self-made man truly, and therefore not perfectly made. All of Ezra's energies had been centered on business. When the time came, as come it did, that it profited him to sell out his holdings and relinquish his sway, it left him a lonely, resourceless man, nervous, despondent, unable to sleep and decidedly cross.

As often happens in such cases, his faithful wife, after bearing the heat and the burden, had not lived to view the land of golden promise. Even before the foundations of the great house by the lake were laid, she was dead, her back bowed with patience, her hands still hard from toil, and Ezra was alone.

The great house by the lake was finished, its towers a shining mark for miles around. On every side, except where the waters lapped and laved, stretched boundless acres, woodland, mountains and meadows fair, with marvelous Italian gardens closely encircling; and in the midst of it all dwelt Ezra, miserable.

He had dreamed by this magnificence to attract friends; but it repelled his self-respecting neighbors. They thought him exclusive—and left him so.

Then it was that Ezra called to mind his only child, Celia, consigned for years to a fashionable Eastern boarding school. So he sent for her to come and make out of the insufferable splendor a home for him.

Ill at ease was Ezra when he waited for his private yacht to bring Celia from the railway station, twenty miles away. He had not seen her since she was a little child. His knowledge of girls at best was scant. Might he not be about to jump into the fire of worry from the frying pan of loneliness? His great heart in his great chest was fluttering strangely indeed for such a rugged, solid-looking man, when he went hesitatingly down the gangplank.

In the cabin a slight figure in black was adjusting her hat before the mirror. The light was dim, and from the reflection Ezra was conscious only of eyes bright and keen scanning him questioningly. He stepped forward with a rough attempt at an embrace.

"Celia, Celia," he murmured, "you are welcome—"

His outstretched arms closed on themselves. The slight figure in black swung about, safely out of his reach, and bowed gravely yet mockingly.

"I am not Celia, Mr. Calderhead," she said. "I am Miss Martha Braden, one of Celia's teachers, of whom she may have written. She was so good as to ask me to visit her—"

"But Celia? Where is she?" asked Ezra.

"Oh, Celia always has a way of her own. To-day her particular way was to take the steamer around."

"Ridiculous. It makes twenty stops. It is as slow as molasses."

"All the sweeter, perhaps, when there is a handsome young man aboard."

"What has a handsome young man to do with my daughter?"

"I don't know, I'm sure; but from the fact that we had to drive him from singing ballads under her window at school I might suspect—"

"The jackanapes!"

"No, indeed," laughing, "he's an artist."

"The vagabond, then—some trifling thing unworthy the name of man."

"He has a man's name, sir—Reginald Blount. I read it on his suit case. I've seen it, too, in the papers."

"Reginald—worse and worse. And does he think to put up with me? I tell you I won't put up with it—it, I say, advisedly."

"Oh, dear, no. He is going to stop at the Lacrine House."

"Well, he will stop there, I promise you that."

"You may think better of his pretensions after you have slept over them."

"Slept over them?" Ezra laughed bit-

terly. "Yes, I will think better of them then."

"Ah," exclaimed the little schoolteacher sagely, "is it so?"

And all the way up to the house, though Ezra sputtered and fumed, he was conscious of the brave brown eyes that looked questioningly at him.

Celia arrived duly, and proved such a sunshiny creature, with the fair hair, high color and blue eyes of a daughter of the light, that her father had not the heart to put a cloud on her spirits by reproof. But he remained silent about Reginald Blount—ominously silent; and so the clouds came to her with the night.

Early the next morning Ezra strolled alone through his vast estate. He was fagged from want of sleep; his mind was as out of joint, as life seemed to be. What did it all amount to—what was the use? He had fallen by the wayside, in the prime of his years, in the fulness of his strength, while the great world of pleasure and endeavor rushed on and on unheeding.

It was exasperating to Ezra in such a mood to come unexpectedly upon a buoyant young man, planted before a canvas in one of his most-cherished nooks, with easel in one hand and brush in the other, whistling while he worked.

"I don't see what you are doing here!" he blurted.

"You don't see? Ah, how sad," returned the blithe young man. "Accept, sir, my sincere sympathy in your affliction. I am painting—"

"You purposely misunderstand me,"

parentage is no more honorable than your character, I wouldn't give much for it."

"Sir, a monarch has stooped to pick up the brush of a true artist such as it is my ambition to be. I would scorn to steal your daughter, just as she would scorn to be stolen. You needn't keep awake nights over that."

"Ah, if I only could sleep," moaned Ezra involuntarily.

"Is that it?" asked Blount with shrewd gaze. "I was wondering what had put you so on edge. It does itch, doesn't it, that creepy feeling up your back and along your legs which at once demands and forbids sleep. Why, an ant hill would be paradise to it. On the other hand, think of the delicious yawns, long drawn out, the deepening shadows, as the eyelids droop. No wonder Sancho Panza said, 'God bless the man who invented sleep.'"

"I would give anything I possess for it," protested Ezra, still intent on his own misery.

"I shall take occasion to hold you to your word, Mr. Calderhead," said Blount briskly. "Meanwhile, adieu."

He picked up his traps, and shouldering them, marched away to the measure of his merry whistle, while Ezra gazed dazedly after him.

The quiet of a truce in the great house by the lake. Though the master daily took his early morning walk, he caught neither sight nor sound of the blithe and graceless artist. Gradually Ezra came to believe, remembering their encounter

solace of natural affection still remained for him?

Alas, the torment of an affection which seemed less natural was already afflicting poor Ezra. Something about the spire and dark schoolteacher, the question and pity of her great brown eyes, the poise with which she had eluded his clumsy embrace, had strangely and strongly interested him. If he were only young again, how proud he would be to lay his fortune at her feet. But an old, grizzled and shattered man to woo his daughter's guest—that should not be. The whole world would laugh as scornfully at him as that snip of an artist had laughed in the insolence of youth. If sweet sleep should return, as Celia said, why, then, perhaps—but no; his nerves, like Macbeth, had murdered sleep. And so, though he could not resist a companionship, which Miss Braden herself did not seem to repel, his conscientious lips refused to utter what his wilful heart would have them say.

One afternoon Ezra sat in the library of the suite reserved for himself on the east side of the house, with private veranda overlooking the garden, thinking disconsolately of these things. He had purposely feigned a business engagement at the village; he had purposely returned secretly, that he might be alone. The silence, like the solitude, was grateful to his mood; and yet, and yet, was it unbroken? Once and again he had seemed to hear light, furtive steps; yet the girls had also made much of an engagement to attend a neighboring tea. Oh, he was so weary, so nervous; no wonder his senses were also awry.

Ezra peered through the venetian blinds of the open windows. Yes, there were those steps again, beyond any possibility of a delusion, faint yet drawing nearer. Breathless he watched and listened as Miss Braden, her finger to her lips, stole from the rear of the veranda. She leaned over the rail. "I have done it," she called. "Oh, I do hope that our scheme may be successful."

And then, oh, then, out from the shadow of the building stepped a young man, blithe and buoyant, and struck a theatrical attitude, his hand on his heart. "If it is, I will adore you forever."

It was Reginald Blount.

Miss Braden stole away as noiselessly as she came. With an impudent whistle, Blount strolled through the intricacies of the garden to the summer house. In the doorway stood Celia, her face bright with expectancy. She held out her hands. They entered together.

Ezra blindly beat his brow. Could complications be worse? Not only was Miss Braden false to him—that was excusable enough, since his vows were unspoken—but Blount was false to Celia. In the realization of him his daughter's innocent heart would be shocked, of how her pretty face would be dulled, by the knowledge of such treachery. Ezra's grief and rage became unselfish. Was he himself not most to blame, since by his obstinate opposition he had afforded this fickle artist a chance to be fickle?

Aimlessly Ezra wandered through his apartments. In the rear was a little retiring room, always kept darkened, in the vain hope that there he might find rest. He threw himself on the great padded lounge opposite the dressing table. It was quiet, it was cool, the soft breeze floating the draperies to and fro; but his eyes stared feverishly through the gloom. Something was different in the room, so his excited nerves told him. What was that white, shadowy thing on his dresser?

Ezra groped to the fixture, but the electricity had not yet been turned on. He groped to the mantel, and lighted a candle in one of the girandoles on either side, which he bore to the dressing table. One glance, and he had set down the ornament, regardless of the fluttering curtains, and was back again on the lounge, staring at a painting of himself.

A marvelous painting; the more Ezra stared, the more absorbed did he become. So he had looked, in his sturdy youth, when he went forth to conquer. So he had looked, in his sturdier manhood, when he directed multitudes and manipulated millions. Even the remarkable poise and



"I don't see what you are doing here!" he blurted."

Ezra went on, reddening. "I mean, what right have you on private grounds?"

"The very highest right, sir—the privilege accorded by the fairest of seneschals to the humblest of her slaves. Would you mind standing one side a bit, while I catch the light on that old trunk?"

And so dumfounded was Ezra that he did stand at one side.

"Pack up your traps and vamoose," at length he ordered. "I am master here."

"You are?" cried the young man, springing to his feet, his face beaming with delight. "Then you are just the man I want to see. Permit me to introduce myself as Reginald Blount, an artist by profession—and your future son-in-law in practise."

"Never! Never!" stormed Ezra like an old clock on the stairs gone mad.

"Why not? I come of honorable parentage. I believe my character is good. I hope I have talent."

"Talent to masquerade while you steal the only child of a rich man. If your

in a light most favorable to himself, that he had put a stop once for all to Blount's intrusions and aspirations, alike presumptuous.

Celia's conduct strengthened her father in this belief. After that first cloudy night, when she realized that true love wouldn't run smooth, she had returned to her sunshiny self. As Blount had whistled, so she now sang as if there was never a care in the world.

In many little ways Celia showed a daughter's devotion. She freshened Ezra's appearance, which had begun to reflect the dulness of his feelings. She became vastly interested in forming a collection of every picture ever made of him, from the earliest daguerreotype to the latest cabinet.

"Poor papa," she would say, "when you begin to sleep again you will be younger and handsomer and more good natured than any or all of these."

Such solicitude surprised and touched the lonely man. Could it be that the

[CONCLUDED ON PAGE 17]

Things Worth Knowing

America's Sponge Industry

ALTHOUGH the sponge is a common article of domestic use, there are comparatively few who know anything of its growth or of where or how it is procured. There are also few who know that the sponge industry in this country leads the world in the volume of its business, the equipment of its vessels and the intelligence displayed in conducting the work. There is a constant demand for all of the finer grades of sponge. The variety known as toilet sponge is used in potteries all over the world for imparting that smoothness of finish to delicate ware that cannot be attained in any other way. Sponges are also used as insulators in electrical machines, and in many branches of manufacture they are valued. The latest government report of the sponge industry, made six years ago, shows that 346,889 pounds of the marine growth were pulled and prepared for the market, and that the sale netted to the spongers \$364,422, an average of more than one dollar a pound.

Sponging in Key West, and also in Nassau, which is an important sponging center of the British Indies, is conducted on shares. The majority of the sponging vessels' proprietors are New York men. The proprietor equips the vessels and pays all expenses of the expedition, and his share of the catch is one half or one third, the remaining portion being shared equally between the men. If the weather is favorable and the men energetic and skilful, the cruise of from five to eight weeks may net from fifty to sixty dollars each for the men. Sponging is an arduous occupation, and "hookers" who follow the work the year round are short lived. The work develops enormous strength in the arms and shoulders.—*Leslie's Weekly*.

Home-Made Ice

THE problem of producing ice in small quantities quickly and cheaply has apparently been solved by a French inventor, who has perfected a machine which is cheap, simple of operation, practically everlasting and thoroughly practical.

It may be operated by a belt connected with a steam engine, by a small electric motor or by hand cranks. The invention is a rotative compression and automatic machine, regulating itself to all speeds, whatever may be the temperature of the condensing water used.

The important feature is a cylinder, in which the chemicals are sealed—the latter not requiring renewal and lasting as long as the machine itself—and which, revolving in water, produces the ice. It can also produce cold air.

The machine has no joint piece, no pressure gage, no suction or regulating valve. It will work in water reaching even one hundred and thirteen degrees Fahrenheit, and saves ninety-eight per cent cooling water and seventy per cent of motive power as compared with any other freezing machine known.—*The Technical World*.

A Sixty-Two-Story Building

THE new Equitable Office Building which is soon to be started in New York City will not only be the tallest office building in the world, but it will occupy the most expensive site on which a skyscraper has ever been erected, the value of the block on which the present building stands being estimated at from twelve to fifteen million dollars.

The astonishing feature is that this great new structure represents no ultimate attainment in the architects' art. It can be done, and that most easily. It will be fire proof, rust proof, earthquake proof, bomb proof—one might almost say shell proof. Its life has been calculated at about five thousand years; that is to say, generations hence, when the world has perceptibly grown older, when we have become a warless, cooperative race with larger skulls and fewer teeth and gentler manners, when the rigors of the new glacial epoch shall have piled Arctic glaciers down the valley of the Hudson, the new Equitable Building will still stand upon the block bounded by Broadway, Nassau, Cedar and Pine streets.

Inspection of the plans for the new edifice has just been begun in the building department of the city of New York. These plans alone fill a large volume of fifty-eight pages, and each sheet must be gone over separately, in order that the officials may see that all the requirements of the building laws have been complied with. This task alone will occupy a period of several weeks.

The drawing of the plans alone was a tremendous task, and the cost of this item is estimated at two hundred and fifty thousand dollars, the salary of one hundred and fifty men during the period of six months, which it must have taken them.

According to the plans filed, the new Equitable Building will closely resemble the Metropolitan Life's structure. These plans provide for a main building of thirty-four stories, four hundred and eighty-nine feet high, which will be more than twice as high as the main building of the Metropolitan or of the Singer Company in New York. This main building will have a frontage of one hundred and sixty-seven feet on Broadway, one hundred and fifty-two feet on Nassau Street, and three hundred and four and three hundred and twelve on Pine and Cedar streets respectively.

Above this main building the tower will rise to a distance of four hundred and twenty feet, making the total height nine hundred and nine feet. There will be twenty-eight stories in the tower, which will be surmounted by a cupola.

This tower will be in two sections—one section extending from the thirty-fourth to the forty-ninth story, and the other, a smaller one, rising from the forty-ninth to the fifty-eighth story. The main cupola will extend four stories above this. The general appearance of the entire structure will be that of a castle built from square blocks by some giant baby.—*Harper's Weekly*.

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5. **Songs of the Sunny South** Darling Nelly Grey, Dixie Land, Hard Times Come Again No More, I Wish I Was in Dixie, Listen to the Mocking Bird, Maryland, My Maryland, Massa's in de Cold Ground, My Old Kentucky Home, Nelly Was a Lady, The Old Folks at Home, Old Dog Tray, Old Black Joe, Uncle Ned, Way Down Upon the Suwanee River.
6. **Good Old Songs** Auld Lang Syne, The Bridge, Bonnie Doon, Bring Back My Bonnie to Me, Bloom is on the Rye, Forsaken, Last Rose of Summer, Old Folks at Home, Robin Adair, Rock of Ages, Take Back the Heart, Way Down Upon the Suwanee River, Within a Mile of Edinboro Town.
7. **Sacred Songs** Ave Maria (Intermezzo Cavalleria Rusticana), Calvary, by Paul Rodney; Evening Prayer, by Miss Lindsay; Jerusalem, by Henry Parker; Nearer My God to Thee, by Dr. Lowell Mason Christmas Anthem, by Ambrose Davenport.
8. **Famous American Songs** America, Battle Cry of Freedom, Battle Hymn of the Republic, Columbia, the Gem of the Ocean, Dixie Land, The Girl I Left Behind Me, Glory Hallelujah, Hail Columbia, How Can I Bear to Leave Thee, Just Before the Battle, Mother, Maryland My Maryland, Marching Through Georgia, Star Spangled Banner, Tenting on the Old Camp Ground, Tramp, Tramp, Tramp, Yankee Doodle.
9. **Home Songs** Home Sweet Home, Way Down Upon the Suwanee River, My Old Kentucky Home, The Old Oaken Bucket, Nearer My God to Thee, Afterwards, One Sweetly Solemn Thought, The Last Rose of Summer, Love's Old Sweet Song, Alice, Where Art Thou.
10. **Parlor Songs** Comin' Thro the Rye, Listen to the Mocking Bird, Ben Bolt, Massa's in de Cold Ground, Killarney, How Can I Leave Thee, Jaunita, Call Me Back Again, Heart Bowed Down, La Paloma (The Dove) Spanish and English.

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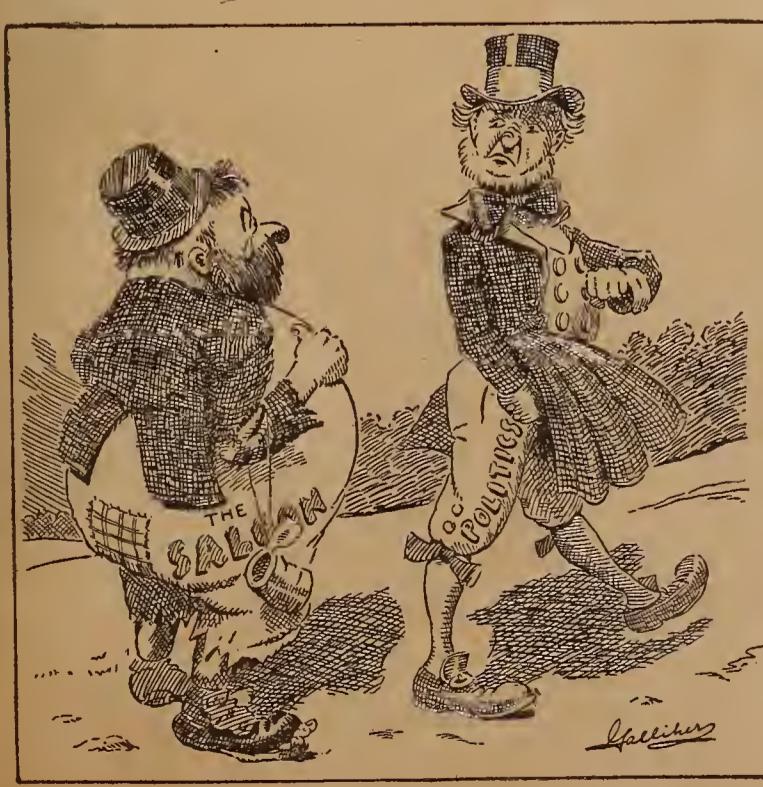
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No. 1076—School Apron

Pattern cut for 4, 6, 8 and 10 year sizes. Quantity of material required for medium size, or 8 years, four and one half yards of twenty-seven-inch material, or three and three fourths yards of thirty-six-inch material.



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Pattern cut for 6, 8 and 10 year sizes. Quantity of material required for medium size, or 8 years, two and three fourths yards of twenty-seven-inch material, or two and one fourth yards of thirty-six-inch material.



No. 850—Apron With Round Yoke

Pattern cut for 2, 4, 6 and 8 year sizes. Quantity of material required for medium size, or 6 years, four and one half yards of twenty-seven-inch material, or three and one half yards of thirty-six-inch material.



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Sizes 6, 8 and 10 years.



No. 987—Single-Breasted Box Coat

Pattern cut for 6, 8, 10 and 12 year sizes. Quantity of material required for medium size, or 8 years, four and one half yards of twenty-seven-inch material, or two and five eighths yards of forty-four-inch material, with three yards of braid for trimming.

No. 985—Reefer With Adjustable Shield

Pattern cut for 4, 6 and 8 year sizes. Quantity of material required for medium size, or 6 years, three and three eighths yards of twenty-two-inch material, or two and one half yards of thirty-six-inch material, with one half yard of contrasting material for trimming.



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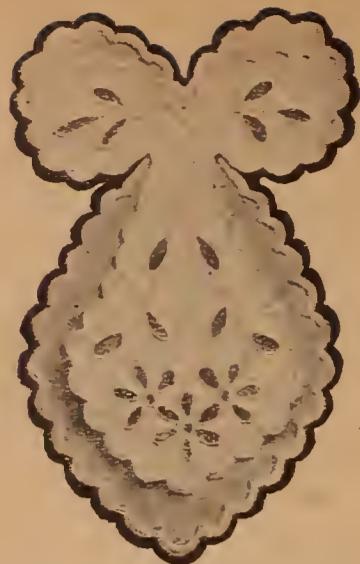
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No. 935—Child's Nightgown With Square Yoke
Sizes 2, 4, 6 and 8 years.



348-A—Tab of Pink and White Linen. Stamped Tab, 15 Cents. Thread, 10 Cents. Designed by Evelyn Parsons.

A TAB of embroidered white linen over one of pale pink forms this dainty little neck trimming to be worn with a turn-down collar or a stock.

The upper tab is worked in eyelet embroidery, while the lower tab is buttonholed on the edges. The tabs need not even be caught together, as one of the little fancy pins which every woman uses for such purposes will hold them together.

The sofa cushion is embroidered in the simplest sort of an outline design, and is especially commended to the woman who is just beginning to do fancy work. It is so easy to do that a child might work it correctly. It is the coloring in this cushion that makes it attractive.

The large flowers are outlined with a rich mahogany red and their centers are yellow French knots. The scrolls are worked in bright green. This combination of colors on the brown background is especially effective. The thread used is very coarse and makes a heavy outline.

The back of this pillow cover is cut in two pieces. One side buttons over the other, so that the pillow may easily be slipped out when the cover is laundered. This is a particularly practical way to make a cover when it is to be laundered. If, however, one prefers a back without the opening, the pieces may be seamed together.

In making the sofa cushion the backs and front are first stitched together on the wrong side and then turned. They are again stitched about one inch in from the edge. This line of stitching is concealed with an outline of the red cotton.

Heavy brown crash is used as the foundation for a serviceable shopping bag. The flowers are worked in two shades of old rose, with green centers. The three upper petals of the flowers are worked in the lighter shade of rose, and the darker shade is used for the two lower petals. The circles are worked with green. The buttonhole or Wallachian stitch is used for the work.

In working the circles, make a chain stitch for the padding. Punch a hole in the center of the circle and work buttonhole stitches into this. In the flowers the buttonhole stitches should slant from the center to the edge.

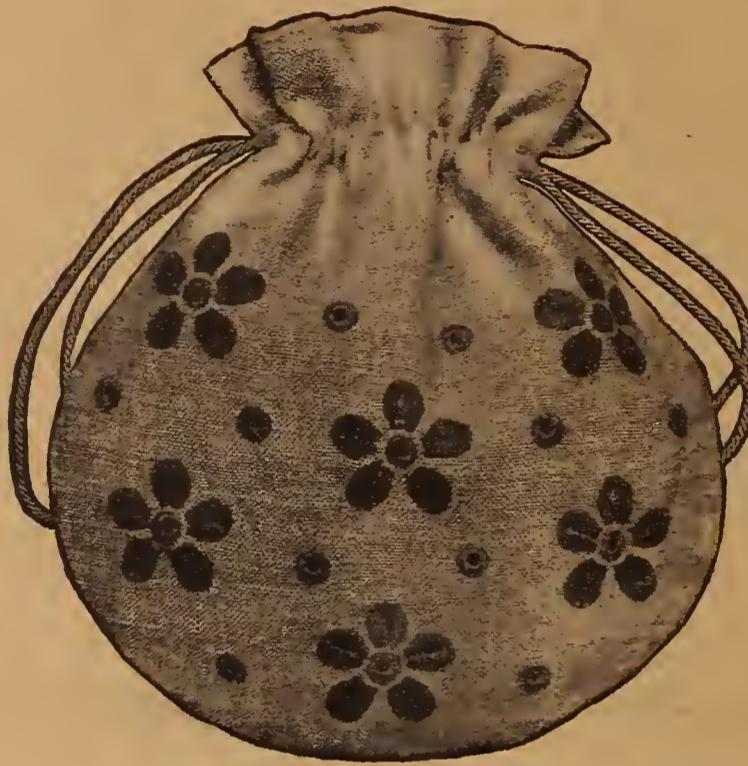
There will be many shirt-waist suits of flannel, serge and other heavy fabrics worn this season. In fact, few women

who make a study of fashion's trend will wear light waists and cloth skirts. With these dark shirt-waist costumes colored belts are especially effective; indeed, they add the one bright note of color in the entire costume.

Belt No. 25 is made of linen, in a light shade of tan. The material is a very heavy quality designed particularly for belts of this description.

The colors are bright, but the black outlines tone them down so artistically that the belt may be worn with a skirt of almost any color. The squares and the dots are red, while the ovals are blue. Green is used on the edges. Each color is outlined with black.

In working, use three threads of cotton for the solid work and the buttonholing and only two threads of the black for the outlining. In providing the thread for this work enough has been allowed so that the solid portions of the work may be padded slightly.



No. 24—Embroidered Shopping Bag. Stamped on Brown Crash (Size Eleven by Twelve Inches), 40 Cents. Thread (Blue and Green or Rose and Green), 15 Cents. Silk Cord, 15 Cents. Designed by Evelyn Parsons.

Luster Brocadoths

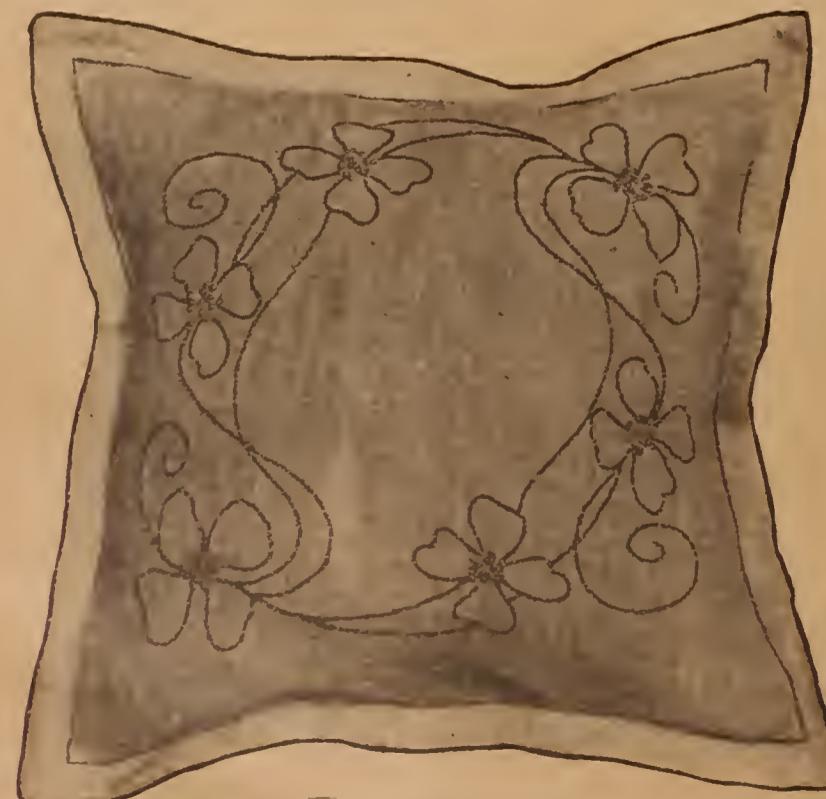
BROADCLOTH with high luster surface is still pre-eminent in dress goods, despite the many novelties that have been brought out. For fall they are shown in an extremely handsome line of colorings. For a dependable costume of either plain or dressy character nothing can be more practical than broadcloth. The novelty feature in broadcloth is the polka-dot printing, shown both in all-over and border effects and with the dots in graduated sizes.

The New Yoke Collars

THE LATEST and most fashionable of these collars are made of net which is finely tucked. The edges are finished with double ruchings or narrow frills of lace. The tucks in the collar portion are stitched flat, but form a plaiting above the collar line. The lower part, or yoke, is formed by a wide plaiting that is very flat.

The use of black-and-white net, maline and point d'esprit ruchings together, one of black and one of white, is a new feature in neckwear fashions. The two are not united in the one ruching, but one black and one white ruche are sewn together and worn at the same time.

In linen collars those surmounted and finished at the base with frillings are the most prominent. Practically every stock collar, whether finished with a jabot or tie, is topped with a ruching. The net collars with large jabots are much seen



No. 23—Sofa Cushion (to be Used on a Twenty-Inch Pillow). Stamped on Brown Crash, 55 Cents. Thread, 12 Cents. Designed by Evelyn Parsons.

NOTE—Order Miss Parsons' embroidery patterns by number from the Embroidery Department, Farm and Fireside, Springfield, Ohio. Remit by money order, currency or stamps.

About the Directoire Modes

PARIS says: Extreme Directoire modes for the autumn—the sheath skirt slashed at the sides, satin knickerbockers in place of petticoats, the highest of high collars and the slimmest of slim silhouettes.

New York says: Directoire modes? Yes, but first let us modify them. The American woman likes to take her fashions from France, but always subject to her own ideas. She wants to be in style, of course, but she wants more to be herself. This will be specially evident this fall.

The influence of the Directoire will be felt in the lines of the new gowns and separate coats, in neckwear and in hats, but with our best-dressed women the conspicuous features of the Directoire modes will be omitted.

So far as the silhouette is concerned, however, it will be the aim of every woman, be she French or American, to look slender, for the most effective of the model gowns seem made purposely for that fortunate type of woman who is tall, lithe and slender. In comparison with last year's fashions, the new skirts are extremely close fitting over the hips and scant toward the hem. The bodices lack fulness and the sleeves are small, conspicuously so, and very long.

Of course, the sheath-fitting Directoire skirt slashed at the side, as it is seen in Paris, will not be worn by women of refinement in America, but among our new models will be a very charming modification of it—a graceful skirt fitting smoothly over the hips and open at the sides, to show a panel of velvet.

To give the high-waisted Directoire effect there will be many corset skirts worn finished very simply at the top with merely a piping or a cording. The majority of the walking skirts will be gored, though some will show circular sides with plaits in the front—preferably a double box plait. The plain back is seen in many of the new skirts, sometimes in the form of a flat, narrow panel trimmed with buttons.

Buttons

BUTTONS are seen on many of the new fall costumes. Some are used for fastening, while others are only ornamental. The crochet button is by far the most fashionable of all.

The crochet button is worked up in silk cord, and covers, in pretty designs, large flat velvet or satin molds, self colored or contrasting. In the latter case the mold covered with yellow or light gray satin is extremely effective, presenting quite a metallic appearance through the open work of the crochet, this being of a different color.

Other large satin buttons are ornamented with a passementerie star in their center. A clever idea is to surround satin buttons, which in themselves are large, with a quilling of satin or velvet ribbon. These naturally are purely ornamental and form, in single file or in groups of three, a variation on the macaroon trimmings now in favor.

Buttons of colored metals wrought in artistic design are used to trim fur and velvet coats, while large black velvet buttons ornament the Directoire pockets and deep cuffs on cloth outside garments.

Ottoman silk has come back into fashion again, not only for costumes, but as a trimming. And big Ottoman silk buttons are used on cloth gowns. Some have cloth rims and some have rims of metal or dull silver. Many black buttons are fashionable. If the gown is trimmed with black satin, for instance, then the buttons are black satin. Black bone buttons are also good style, especially on the skirts which button straight up the front.

No. 25—Colored Linen Belt. Stamped on Linen, 25 Cents. Thread, 20 Cents. Designed by Evelyn Parsons.



Sunday Reading

Injury of Being Defrauded

IT is not every one who can preserve the balance of sound judgment when he has been deceived, cheated or imposed upon. The danger always is that if he has been of a confiding disposition he will go to the other extreme and be filled with suspicions of innocent persons.

The loss to the nature of the man who has been defrauded is often most serious. His trust in men is shaken; his affections are chilled at their source; he incases himself in reserve, and looks out from behind his entrenchments with suspicious eyes upon all comers. He has learned a lesson that is fatal to the best things in his nature.

A wise man once said that he had rather be deceived once in a hundred times than go about suspecting the other ninety-nine persons. This, we take it, is the essence of the philosophy of the treatment of frauds. We must endeavor to keep the balance of sound judgment, to strongly refuse to be forced into a suspicious condition, to sustain a just frame of mind for the preservation of our own best selves. We must be willing to risk being defrauded, as the loss will be less on that side than on the other.

Wise men from early times have put their trust in the few, not in the many. "On God and godlike men we build our trust," sang Tennyson, and those who have proved upright imperatively demand our faith.

The attitude toward those whom we can help should be considered: the starving man must be fed, although the tramp yesterday threw away the package of food you gave him before he turned the corner. The necessity of to-day's claimant upon your assistance must be looked into, although yesterday you helped a rascal. Otherwise you wrong your own nature, and you may wrong another who is worthy of your help. From "Making the Most of Ourselves," by Calvin Dill Wilson.

An Artistic Cure

[CONTINUED FROM PAGE 12]

posture could not take away the impression of innate power—the power he once possessed, but now had lost.

But it was the remarkable poise and posture, after all, that held Ezra fascinated. The picture was drowsy; the picture was actually gaping. Sleep was upon it, even as it used to be upon him when wearied, but not exhausted, he would go to his rest; sweet sleep, stealing softly, slowly, now lulling as if with music, now soothing as if with a mother's hand; sweet sleep, the balm for every trouble; sweet sleep, the magic restorative of happiness; sweet—With a mighty yawn, the duplicate of that which the painting portrayed, Ezra sank into the deep, tranquil slumber he had not known for months.

With a start Ezra woke, yet still yawning. The blinds, which he had not cared to disturb, were now thrown wide open. On the floor lay a charred mass of drapery, and a canvas hopelessly singed. Celia was bending tearfully over him, while at one side stood Miss Braden, pale and anxious, yet with a steadfast light in her fine, brave eyes.

"Oh, papa," cried Celia, "forgive us. We thought you would not be back until late. We hoped that our little experiment might give you a good night's sleep. You might have been burned to death had not Martha, dear Martha, seen the smoke, and dashed in to drag down the blazing curtains."

"Don't, Celia," cried the teacher, plainly distressed. "It is no more than any one would have done for anybody."

"Don't say that, dearest," protested Ezra, strangely alert and vigorous. "Let me believe that at least a shadow of the great love I have for you influenced your watchfulness, your daring—"

And in Miss Braden's great brown eyes no question lingered as they gave him her answer.

"Oh, papa," exclaimed Celia, clapping her hands, "you are better already."

"But the marvelous picture, the artistic cure," said Ezra ruefully, "it is ruined." And he gaped again in memory of its magic.

"Have no concern there, sir," said a buoyant voice, and Blount stepped in briskly from the next room. "I am prepared to furnish you any quantity of similar portraits, wholesale or retail, as the occasion demands. On terms already stated, of course, you understand?"

And for answer Ezra led Celia to him, and gave him her hand.

God's Help

NOTHING is small or great in God's sight; whatever He wills becomes great to us, however seemingly trifling, and if once the voice of conscience tells us that He requires anything of us, we have no right to measure its importance. On the other hand, whatever He would not have us do, however important we may think it, is as naught to us. How do you know what you may lose by neglecting this duty, which you think so trifling, or the blessing which its faithful performance may bring?

Be sure that if you do your very best in that which is laid upon you daily, you will not be left without sufficient help when some weightier occasion arises.

Give yourself to Him, fix your eye upon Him, listen to His voice, and then go on bravely and cheerfully.—Jean Nicolas Grou.

The Eternal Goodness

I long for household voices gone,
For vanished smiles I long,
But God hath led my dear ones on.
And He can do no wrong.

I know not what the future hath
Of marvel or surprise,
Assured alone that life and death
His mercy underlies.

And if my heart and flesh are weak
To bear an untried pain,
The bruised reed He will not break,
But strengthen and sustain.

No offering of my own I have,
Nor works my faith to prove;
I can but give the gift He gave,
And plead His love for love.

And so beside the Silent Sea
I wait the muffled oar;
No harm from Him can come to me
On ocean or on shore.

I know not where His islands lift
Their fronded palms in air;
I only know I cannot drift
Beyond His love and care.

—John Greenleaf Whittier.

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Our Young Folks' Department



Cousin Sally's Letter

DEAR BOYS AND GIRLS:—It seems only a month or so ago when I was in Springfield writing to you all for the first time. But May has long since passed, and here it is autumn. Vacation days are over, and most of you are back at school, and are all ready for a good winter of work and play. As I sit here at my desk writing this letter I can picture each one of you boys and girls at school, bent over your desks, hard at work, and then when evening comes I can see you and your brothers and sisters seated around the table studying your lessons, and then playing games a while, until mother comes in and hurries you off to bed. After all, fall and winter are not such gloomy seasons as some people seem to think. There is nothing so nice and cozy in the winter as our own dear fireplaces, where all the members of the family gather together for a little chat after the day's work.

I hope all of my cousins are going to work hard and earnestly at their studies this winter, even though there may be certain ones which they dislike. Try to master the hard things. It is mastering that counts. But don't work so hard that you will forget all about your Cousin Sally. She wants to join you after your school lessons are over for the day. I am planning better and better times for you all, and I am sure we are going to have a very jolly winter together here in our own little "corner."

I am so sorry that the last puzzle contest proved too hard for the majority of my cousins. Out of the many hundreds of answers sent to me there were only four correct lists. But don't let this discourage you, for I shall try to make the next puzzles easier.

I am sorry that I have not space enough to print every letter sent to me, but just the same I am grateful for them and thank the following boys and girls for writing to me and for the interest they are taking in our department. I hope it will continue.

Angus B. Anderson, Maude Strouss, Addie M. Trull, Effie Evan, John Doolittle, Mary Rupert, Ray Robinson, Blanchette Brown, Blanche Myers, Mabel Nelson, Pearl Nelson, Winifred Evans, Mabel Cameron, Ellen Clark, Helen Hample, Annie Hample, Helena Bigler, Elsie Klander, Lois Clouse, Lulu Blanche Lutz, Eliza A. Burton, Ella Chase, Anna Lou Denham, Roy Mullineaux, Mildred Sheffield, Bessie Marple, Marjorie A. Crowdis, Lillian Matthews, Joe Swanton, Pauline Walsey, Gladys Hopkins, Glyde Frost, Magdalene Bishop, Irma N. Johnson, Lillian Phillippe, Ellie McHugh, Lillian Fritsche, Thelma F. McDougal, Emma Woods, Mary Hodgson, Alma T. Rock, Hazel Mitchell, Bessie M. Martin, Alma Cribbins.

With much love to you all, I am
Always faithfully,
COUSIN SALLY.

The Letter Box

DEAR COUSIN SALLY:—I am a little boy just eight years old. I live on a farm near Scottsburg, Oregon. The Umpqua River runs by our house, and we have a fine time fishing. I have four sisters and two brothers. I have a dog named Tip. Papa has taken FARM AND FIRESIDE over fifteen years. We live two and a half miles from school. We have a nice country schoolhouse.

Sincerely yours,
HOWARD MONSON.

DEAR COUSIN SALLY:—I must tell you about the nice time I had last Christmas. While visiting in St. Louis we were taken by our hostess to "Shaw's Garden." Mr. Shaw was a wealthy man, and left a fine mansion and a college for studying botany near the garden when he died. Before he died he built himself a tomb, but did not like it, so built another, much finer and costlier than the first. It is very tall, something like a small tower. The sides are of glass with iron bars around it. Inside of the tomb is his coffin, with a statue of himself. The entrance to the garden is very beautiful. The walks are of gravel, and between them are places for flowers. The "greenhouse" contained all kinds of lovely flowers. When Mr. Shaw died he left the garden to the city of St. Louis. My mother's name is the same as yours—Sally. I am thirteen years old. If this is printed, I would love to have all the boys and girls who read it exchange post cards with me. Your loving cousin,

LIBBIE WHITE,

Coulterville, Illinois. R. R. No. 3

Naming the Boat

By L. S. Portor

"If I had a boat," said Dolly Brandon, "I know what I'd name it."

"The Princess Gladiola," or something else romantic, I bet," said Tom.

"No, I wouldn't any such thing. I'd name it 'The Tom Brandon.' So there!"

"That shows what you know about naming boats! Nobody ever gives a boat a boy's name. You ought to give it a girl's name, a beautiful one, after somebody that's done something fine."

"Oh, Tom," said Dolly wistfully, "I do hope you'll win the race!" She wished her own name were beautiful; she wished she had done something fine. How lovely it would be to have a boat named after her.

"Hello, Jeff," said Tom. "Where did you come from?"

A tall, blond boy came through the bushes. "Hello. How are you getting on?"

"There's a lot to do yet, but if you'll help I can get it finished in time."

Tom looked about among his tools and odd pieces of wood. "Well, I declare, I forgot the two wooden braces, Dolly! They're in the barn. Run and get them,

in the blackberry tangle, and was off across the meadow toward Doctor Carter's home.

It was a long way, but she hurried on. When she got to the brook she found it much swollen, and the log bridge had been swept away. She followed the bank, trying to find a place to cross. The sunlight was getting mellow and late. Tom must be wondering by this time. She would not go for Doctor Carter, after all. She would go back to Tom. There was no bridge across the brook, anyway, and that was excuse enough. She started back through the woods. A long blackberry vine caught at her skirt as though to stop her. "Oh, dear," she said, "what shall I do?"

She turned at last, and ran back to the brook. She tried to test the depth of the water with her foot. Then she splashed into the stream. What did it matter about there being no bridge—Tilly had trusted her to get the doctor. The water was deeper than she thought. Half way across she stood shivering and ready to turn back. Then she went on, slipped a little, and then the current caught her,

tor Carter was coming, then she took the braces from the blackberry thicket. The evening was beginning to darken. A little more, however, and the path to the river would come in sight. She looked up. Tom and Jeff were coming across the hill.

"Tom, Tom," she called, "here are the braces!"

"I don't want them!" called Tom sharply. "It's too late! There's no use now! I can't get the boat done, and it's your fault!"

"Oh, Tom!" called Dolly, but her voice somehow felt smothered. If only she could explain! Then she forgot to be brave any longer. She looked after Tom and Jeff, then sat down on a stone, and sobbed and sobbed, and could not stop.

Later, old Doctor Carter driving by, drew rein and looked down at what seemed to be in the dusk a heap of bedraggled clothing by the roadside. Then he got out, and stooped over a very limp little figure.

"'Pon my soul!" said he, stooping closer, near-sightedly. "if it isn't Dolly Brandon!" He took the limp little body up in his arms. "Wet as a drowned rat!"

He bundled the silent little figure into his buggy, and climbed in. Then he drove on at a furious rate, muttering to himself.

Dolly looked around her bewildered. The sunlight was streaming across the red-and-white checks of the quilt on the big bed in mother's room. She did not quite know where she was. Her head felt so strange and light. Then there was Tom sitting in the big armchair.

"Hello, Dolly, are you awake?" Tom got up, and leaned over her gently. "Say, Doll, I didn't mean to be so dreadfully cross about the braces. It was just plucky of you. Yes, it was."

"Oh, Tom, I was too late, wasn't I?" said Dolly.

"Don't you bother!" said Tom. "I didn't know. I thought you had poked Jinny is better, and that's because you got the doctor."

Dolly lay still for a moment, then she turned to him wistfully. "What name did you choose?" she asked.

"The Rowena," in 'Ivanhoe,' you know."

"Did you?" Somehow her throat felt tight again.

"But I went down this morning and scraped it off."

"Oh, Tom, why?"

"I've painted it all over again, and she looks fine. I've called her 'The Dolly Brandon!'"

"Oh, Tom," said Dolly breathlessly, "you haven't!"

But Tom only nodded his head wisely, and pursed his lips in that funny way he had, and said, "Yes, I have."

Answers to Puzzles of August 10th

A Ladder

L	I	N
R	O	O
N	A	R
C	O	N
O	A	I
L	A	V
N	A	S

A Square

S	T	A	R
T	O	N	E
A	N	T	S
R	E	S	T

A Diamond

D	O	R	E
D	R	E	A
R	E	A	M

A Late Assembly

1. Belate. 2. Elate. 3. Dilate. 4. Relate. 5. Collate. 6. Translate. 7. Accumulate. 8. Prelate. 9. Oblate. 10. Interpolate.

Winners in the Puzzle Contest

FLORENCE B. CRANE, age eleven, Hammondsport, New York, and Ernest L. Wilson, of Pinson, Tennessee, were awarded a bank, while Emma F. Richardson, age thirteen, of Gouverneur, New York, and Ida L. Krobeth, age fifteen, of New York City, were the only two who were awarded pictures, as all of the other contestants failed.

"Half way across she stood shivering and ready to turn back."

like a good girl, and get back quick as ever you can! I'd go myself, but there isn't time. The boats have all got to be entered this evening, you know."

But Dolly was already out of the boat, running away toward home. Although she hated the barbed-wire fence and was afraid of the cows, Dolly decided to run back with the braces through the meadow and down past Tilly's cabin, because that was the quickest way. She ran on and on. When she got within sight of Tilly's cabin, there was Tilly running up the road waving her apron.

"Aw, Miss Dolly, honey! Please, ma'am, fetch de doctah; Jinny's upset de presarve kettle an' mos' burn herse'f to deaf. Run right quick, while I try to hesh her cryin'."

"Oh, Tilly," said Dolly with panting breath, "I'm so sorry, but I can't go."

"Oh, yes, you kin, honey! Go by de brook way! It's de quickes'! Run right quick, honey!"

Dolly stood irresolute. If the boat weren't finished, and it was her fault, what would Tom say? "Oh, Tilly, what made Jinny do it?" she said. "I wish she hadn't." But she was hiding the braces

and she went down, but scrambled up again, and splashed on through. The swift water tugged at her clothes, and more than all, she was afraid, very much afraid. She got to the other bank at last, and scrambled up it, muddy and forlorn. The woods looked dark ahead of her.

She ran on, cold and afraid—up the little hill, then to the woods' edge, and there was Doctor Carter's house. At the gate was Doctor Carter's "Jim" mending the fence.

"Oh, Jim," cried Dolly, her teeth chattering, "run and tell Doctor Carter to come over to Tilly's cabin! Little Jinny's hurt!"

"Bless gracious, missy, what is you done?" said Jim.

"Oh, I came through the brook, because it was quickest. Run, Jim, quick as ever you can, please."

Dolly watched Jim a moment while he ran toward the house, then she started back—not by the woods this time, for the sun was almost down, and she dared not. She must go back by the long way. She hurried on. By and by she began to feel weak, and her head swam. When she got to Tilly's cabin, she called that Doc-

That Promising Boy

By Milford W. Foshay

"Well, now, did you ever see the like of it?" and Aunt Carrie held the drawing at arm's length, while the admiration expressed in tone and look made twelve-year-old Freeman Martin hang his head for blushing joy.

"What's Free been doing this time?" his mother asked, her manner indicating that she expected to be pleased.

"Why, this horse. Isn't it a beauty?"

Mrs. Martin went to the side of her sister and inspected the drawing of her son.

"Yes, that's pretty good," she agreed. "But then I don't know as it's any better than lots of others he's done."

"Well, better or not, I want to take it to the quilting this afternoon, and show them what Free can do. May I?" turning to the boy.

"Oh, I don't care," Free replied with an attempt at indifference, his heart thumping so that he could scarcely speak.

The only critic he really feared was Aunt Carrie, and if she thought it good enough to show, there was not much danger of anybody's laughing at it—something he dreaded far more than to have it honestly picked to pieces.

The drawing was taken, and exhibited to the ladies. They admired it greatly, and when Aunt Carrie stopped in to leave it on her way home, Mrs. Hastings came with her. The latter was the wealthy woman of the neighborhood, and a patron of art, having bought several of Aunt Carrie's water colors. She wished now to talk with Free, and he was called from the afternoon chores which he had begun.

"Freeman," Mrs. Hastings said, "I like that horse of yours very much, and I want to know if you will make me a larger one as a pattern for the center piece of a rug I am going to hook?"

"Y-yes'm," Free stammered. "I don't know whether I can do it good enough, though," he added, as he regained his composure.

"I'll risk that!" she declared encouragingly. "Let me show you about what I need."

They drew together at the table, and he received her directions. He made several suggestions, and these so much pleased Mrs. Hastings that she exclaimed:

"Well, you don't require any instructions from me! You finish it up the way you think it will look most natural, and I am sure to be satisfied. Now, how much are you going to charge me?" she concluded in a bantering tone.

The boy looked up in surprise. He was thinking only of the glory of the commission.

"Nothing," he blurted out.

"Oh, but you must charge something for the kind of work you do. It will help you get material for practise. I'll give you five dollars."

Free gasped. Dollars were scarce articles in the household, and a fortune seemed to have been placed before him. The bargain was then made and he went out to finish his chores, while the ladies talked over his possible future.

From this afternoon the genius of Free Martin was a topic of conversation in the small village, on the edge of which his father's farm was situated, and whose school he attended. He always stood well in his studies, and long had held the first place in drawing in his grade. Now, with fresh ambition, he developed rapidly. Mr. Martin consulted with the best authorities at hand—his pastor and the principal of the school—and it was decided to give Free an opportunity to study art, should he continue his aptitude in this direction.

This he did. His parents immediately began to save money for his art education, denying themselves many things to do so, and when he graduated from the high school he was sent to the city to take lessons from a competent instructor, who was to determine whether or not Free had any real talent for art. A favorable decision was rendered, and at nineteen he was admitted to the school of art.

His home being but fifty miles distant, Free made visits often. His father and mother would have it so. He was their youngest child, and they had at first intended that he should have the farm and take care of them in their old age. Now, of course, all this was changed, but they wished to hold him as close to them as possible. His coming gladdened their hearts. He always brought a package of his drawings with him, and took delight in showing the marks of progress. They did not comprehend the details, but they understood the spirit of eagerness with which he explained them, and they were more than satisfied.

After the second year in the art school they felt that a change was taking place in him. They did not understand it, but during the fourth year they were able to recognize certain marks as indicative of a changed attitude. His visits home were infrequent, and he was in a hurry to return.

"What's the good?" he asked indifferently, when coaxed by his mother to remain longer. "It's only a waste of time, and I'm working hard."

This was true; but could he not spare to them a little time in which to hear him talk, look at him, enjoy his presence in the home? They felt they had an especial right to ask this question, since they furnished him the means and enabled him to continue his work. But they did not tell him this. What hurt them the deepest was that he did not appear to understand why they loved to have him at home. Then, too, he no longer brought many of his drawings for them to see, and he showed a rapid decline of interest in explaining them.

"What's the use?" he asked. "You can't understand the details."

Again it was true; but could he not see the pride and eager interest in what he was saying—that the very sound of his voice and the use of unfamiliar terms were sweet in their ears?

Mr. and Mrs. Martin had looked forward with expectations to the exhibition at the close of Freeman's fourth year, hoping to attend and enjoy whatever in the way of honors their son received; but a letter from him changed this.

Among other things he said he did not think they would enjoy it, and that it would hardly be worth while for them to attend. Of course, they could come if they thought they would like to, but he did not know whether they could afford the trip. The fact was that the last three months had been very expensive, and he would need all the cash they could spare. He hoped shortly to be of no more expense to them.

They sent him the money, and stayed home. The truth in the case was that the student standing highest was to have a position as subordinate instructor, and it had been intimated to Free that he was sure of the appointment. It might not do him any good to have his father and mother from the country in attendance.

Free received the position. He had not been home since Christmas, and he now wrote that his new responsibilities would keep him from home all summer, but that he would try to visit them on Thanksgiving. He did, coming down on the morning train and returning to the city in the evening. The family gathering seemed irksome to him, and the longing in his mother's eyes and the disheartened look on his father's face escaped his notice.

He went through the year with credit to himself and profit to the school. There was no visit home, a few brief letters answering the purpose. In the spring a letter from his mother pleading with him to spend his vacation with them annoyed him. What a dull and profitless vacation it would be! Besides, he was now no expense to them, and why couldn't they let him alone to go on with his work?

Then, there was another reason why he could not go to the country. A vacancy had occurred, and Free was offered the place. He accepted, but he felt that it would be necessary for him to work hard to make good. It was worth fifty dollars a week, and he could not afford to fail. He wrote home that he could not possibly see them before the following winter, if then.

His income had been twenty-five dollars a week, and he found it difficult to make it answer the purpose and be any one. When he came into the fifty dollars, it was not much better. The larger income involved larger outlays.

On the first of October a letter came from home, in which the earnest hope was expressed that Free would attend the family gathering on Thanksgiving. He wrote that it would be impossible. While it would be the first time he had not been with the home people at Thanksgiving, yet he remembered how bored he had been the previous year, and he felt that the sooner he let them know that he had got beyond caring for this foolish sentiment of a family gathering, the better it would be. The reply to this letter contained no allusion to Thanksgiving, but gave the information that his mother was poorly. Free sincerely hoped she would not get dangerously ill, for then he would have to go home, anyway.

He was especially anxious that nothing

should occur to interfere with his program for the following week. A noted artist was coming to address the school, and he could not afford to be absent. On this account he did not answer the letter at all. They would be looking for a reply, and this would keep them from troubling him with any word.

The artist came, looked through the gallery, then addressed the school. In his talk he said:

"The ambition and hope of every true artist is to produce work that will live. To do this it is necessary to recognize the quality of the immortality. It is not the perfect form, but that which the perfect form is made to suggest and lead to. There must be propulsion in it, from lower to higher. As true civilization advances, the perfect model will become less and less an end and more and more a means to the end. In the centuries to come, the work that endures will be of a quality producing fine and strong impulses of the heart for good, rather than the highest esthetic satisfaction. The artist will not produce that work of immortality who does not learn that to ease a heartache or to give a higher impulse to the spirit of man is better art, because finer and purer, than to win applause for outward perfection of form."

As Free listened to the words of the noted artist he felt a tug at his heart strings. Had he not failed, rather than been a success? was the question that came to him over and over again. He stole away from the reception which was given to the artist, and went straight to his own rooms.

Here he wrote a letter home. It was brief, but a part of it contained these words: "I expect to be home for Thanksgiving, and shall try to come the evening before, in order to enjoy the whole day. If mother needs me before that, let me know and I will come at once."

A few days later an answer was received, saying that his mother was up and about, planning for Thanksgiving.

Free went home, as he said, on Wednesday evening, taking with him some of his best work. After supper he spread part of it out on the table, and placed the rest in various positions about the room. Then he sat down beside his mother, put his arm around her and began to point out the effects. Soon he felt a slight quiver, and looking down, he saw that she was gently crying.

"Why, mother—"

She reached up to clasp him around the neck, and holding him close to her, she whispered:

"Thanksgiving is here now, this Wednesday evening. My boy has come back to me!"

It Was the Other Nursery She Wanted

ANXIOUS mother determines to ring up the day nursery to ask for some advice as to her child. Calling for the nursery, she is given Gottfried Gluber, florist and tree dealer. The following conversation ensues:

"I called for the nursery?"

"Yes, ma'am."

"I am so worried about my little Rose."

"Vat seems to be der madder?"

"Oh, not so very much, perhaps, but just a general listlessness and lack of life."

"Ain'd growing righd, eh?"

"No, sir."

"Vell, I vill dell you vat to do. You dake der scissors und cut off aboud two inches from der limbs, und—"

"Wha-a-at?"

"I say dake der scissors und cut off aboud two inches from der limbs, und den turn der garten hose on it for aboud four hours in der morning—"

"Wha-a-at?" And the receiver vibrated at her tone.

"Turn der garten hose on for aboud four hours in der morning, und den pile a lot of plack dirt all around und shprinkle mit insegt powter all ofer der top—"

"Sir-r-r!"

"Shprinkle mit insegt powter all ofer der top. You know usually it is noddings but pugs dot—"

"How dare you, sir? What do you mean by such language to me?"

"Noddings but pugs usually causes der troubles, und den you vant to vash der rose mit a liquid brepreatiuns I haf for sale here—"

"Who in the world are you, anyway?"

"Gottfried Gluber, der florist."

"O-o-oh!" rather weakly. "Good-by—" W. B. Hanson in Judge.

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Farm Notes

Harvesting the Corn Crop

IN HARVESTING the corn crop good work is universally commended and brings its own reward. The old practise of husking the ears and leaving the stalks, which contain over forty per cent of the total feeding value of the corn crop, in the field to decay is entirely too wasteful and must give way to more intensive methods.

With the increase of the dairy business comes the question of cheap rough and succulent feed for the winter months, and this can most profitably be supplied by corn. This means, of course, that some kind of corn harvester must be used. Various cheap machines, such as sled cutters and the like, have been tried and found wanting, and the corn binder has become a permanent fixture on a large number of well managed farms in this country.

There are several different kinds of corn binders, and while each kind may have its special advantages, there are some points that should be particularly observed in the selection of a machine. With a machine in which the bundles of corn are bound while in a horizontal position there is usually more or less trouble from the bundles catching on the stubble and being torn apart. A short iron rod on each of the dividers helps to keep the binding gear from being choked. A machine which has two needles does not need to raise the corn so high, hence less power is required to run it. A very handy attachment is a knife that cuts the stubble close to the ground, thus making further operations on the same ground more convenient.

I find the corn binder a great labor saver, and it is an absolute necessity to handle the corn crop successfully. We have cut corn fifteen feet high and as small as three feet high, and have also taken it up when blown down flat. I put most of my corn in silos, which from experience I have found is much the better place for it. In filling my silos I find that having the corn cut with the binder and tied in bundles makes the filling of the silos much cheaper, because we can handle much more corn in a day with the same number of men.

I harvest my silage corn just as the kernels get nicely started to glaze, which in this section, southern Illinois, is usually about the middle of September. This is our busy time, as the corn is cut and put directly into the silos. When the corn is ready to cut I start the harvesters the day before I am ready to fill the silos, in order to have some cut ahead and the field opened. The sheaves are made medium sized to small, so they will be easy to handle.

In hauling, we use low wagons with wide, flat racks with a standard on the rear end of the rack. When loading, the loader begins at the rear end and piles up a tier of bundles as high as he wishes the load to be, then in front of this he places another tier, and so on until the front end of the rack is reached, then drives to the silage cutter.

The teamster loads and unloads his own load. In unloading, he begins at the front end where he placed the last sheaf, and takes off the last tier put on, down to the rack, then the next, and the next, and so on, always taking the tier clear down to the rack. This method enables the teamster to know which sheaf to take next, and avoids the hard and annoying labor of pulling the bundles out when bound in the load, and always gives him a good hard floor on which to stand and work. By this method there is less lost energy and the men make the best time. The teamster hands the bundles to a man, who lays them on the "traveling table" of the silage cutter. The silage cutter has a sixteen-inch knife and is just the right size to take the bundle without having the band cut, and the bundles are laid on the table with the butts of one bundle to the ears of the previous bundle, and a steady stream is kept going in the silage cutter.

The cut corn is elevated into the silos by means of a blower. I like the blower much better than the carrier, as less work is required in the silo, although it takes more power to run it. My two silos are made of white pine staves. Each silo is sixteen feet in diameter and thirty-three feet deep.

When filling the silos we use a barrel with both heads removed, to distribute the corn and keep the silage level. The barrel is suspended from the roof of the silo at such a height that the silage is blown into it from the blower. There an attendant, sitting at the top of the silo, by swinging the barrel may direct the

stream to any part of the silo, thus keeping the silage level without the hard and disagreeable labor in the silo. This barrel attachment works well until the silo is about two thirds full, when it becomes necessary for the attendant to do some work with the fork to keep the silage level.

The crew required for harvesting the corn and filling the silos consists of one man and three horses to run the harvester, three men with teams to haul the corn to the machine, one man to place the corn on the table of the silage cutter, one man to feed the machine, one man at the top of the silo and one man to run the engine.

When corn is to be shocked in the field, it should be thoroughly ripe before being cut, as too early cutting affects both the yield and the quality of the grain. The shuck on the ears should be turning yellow, if not already dry; the latter is preferable, even if the lower blades are overripe.

A frame should be provided for shocking the corn, which may be constructed as follows: Nail two pieces of one by six by five feet to one end of a two-by-three scantling ten feet long. Bore an inch hole three or four feet from the end of the scantling to which the legs have been nailed, and insert an iron rod or something similar. Let the free end of the scantling rest on the ground; the other end is, of course, supported by the one-by-six pieces. With the iron rod thrust through the hole, the device is ready for use.

The corn is placed in the four right angles formed by the scantling and the iron rod, four to six bundles being placed in each of these corners, with the butts set well out at the bottom. Care should be taken to avoid setting the bundles too straight, and to see that the corn is evenly distributed throughout the shock. A little negligence right here will keep one busy resetting the shocks. The other extreme is to be guarded against, also, as the contents of the shock will damage more or less unless the work is done so as to turn off the water.

Too much care cannot be exercised in shocking the corn: a little slovenly work here will ruin the product, even if all the other conditions for a good article are met. In my judgment, failure at this point, more than anything else, is responsible for the prejudice against this method of harvesting the corn crop. If the stalks are wet and moldy the resulting product will be disappointing, regardless of the care which has been exercised in the previous and subsequent handling of the crop.

Just as soon as the stover is sufficiently dry to keep in bulk it should be shredded, as the sooner the crop is worked up, the better. A good machine with which to do the work is, of course, necessary; and an item of equal importance is the power with which to operate the machine. If an engine is to be purchased to run the shredder, it should be at least an eight-horse power. It must be remembered that more power is required to run an eighteen-inch shredder than a thrashing machine of equal size.

In hauling the corn from the field to the shredder enough wagons should be used to keep the shredder going. Low-wheeled wagons with a platform extending out over the wheels are the best for this purpose, as the corn is easily loaded and much can be hauled at a time.

There will be no trouble in keeping the fodder in good condition if it is scattered around well in the barn and not left more than two or two and one half feet deep in a place, which can easily be done with the blower and leveling a little with the fork. It is not best to move fodder which has been lying over night, as it will heat, and stirring it up will likely cause it to mold.

W.M. H. UNDERWOOD.

Harvesting Cow Peas

I CUT my cow peas with a mowing machine after most of the pods have ripened. I do not wait for the vines to wilt, but when the dew is off I put them in small bunches about two or three feet high, and let them stand until well cured. If the weather is wet they have to stand from three to four weeks; but do not be scared, for they will come out with all the leaves on and in good condition.

I learned this by accident, having stacked some vines to get them out of the way of turning with the machine. The stacks were left about six weeks and came out in fine condition.

O. P. STUSSON.

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